UNITED STATES DISTRICT COURT
SOUTHERN DISTRICT OF NEW YORK

IN RE LIBOR-BASED FINANCIAL INSTRUMENTS ANTITRUST LITIGATION	MDL No. 2262
THIS DOCUMENT RELATES TO:	Master File No. 1:11-md-2262-NRB ECF Case
SCHWAB MONEY MARKET FUND; SCHWAB VALUE ADVANTAGE MONEY FUND; SCHWAB RETIREMENT ADVANTAGE MONEY FUND; SCHWAB INVESTOR MONEY FUND; SCHWAB CASH RESERVES; SCHWAB ADVISOR CASH RESERVES; SCHWAB YIELDPLUS FUND; and SCHWAB YIELDPLUS FUND LIQUIDATION TRUST, Plaintiffs, v. BANK OF AMERICA CORPORATION; BANK OF AMERICA, N.A.; BANK OF TOKYO-MITSUBISHI UFJ LTD.; BARCLAYS BANK PLC; CITIGROUP, INC.; CITIBANK, N.A.; COÖPERATIEVE CENTRALE RAIFFEISEN-BOERENLEENBANK B.A.; CREDIT SUISSE GROUP AG; DEUTSCHE BANK AG; HSBC HOLDINGS PLC; HSBC BANK PLC; JPMORGAN CHASE & CO.; JPMORGAN CHASE BANK, NATIONAL ASSOCIATION; LLOYDS BANKING GROUP PLC; HBOS PLC; ROYAL BANK OF CANADA; THE NORINCHUKIN BANK; THE ROYAL BANK OF SCOTLAND GROUP PLC; UBS AG; WESTLB AG; and WESTDEUTSCHE IMMOBILIENBANK AG, Defendants. [Initially filed in the United States District Court for the Northern District of California, Case No. 11-cv-4186-MEJ]	**<u>AMENDED COMPLAINT</u>** **JURY TRIAL DEMANDED**

1. Plaintiffs Schwab Money Market Fund, Schwab Value Advantage Money Fund, Schwab Retirement Advantage Money Fund, Schwab Investor Money Fund, Schwab Cash Reserves, Schwab Advisor Cash Reserves, Schwab YieldPlus Fund, and Schwab YieldPlus Fund Liquidation Trust (collectively, the "Schwab Funds" or the "Funds"), by their counsel, assert claims for violations of federal antitrust law, the Racketeer Influenced and Corrupt Organization Act ("RICO"), and California statutory and common law against the defendants identified below (collectively, "Defendants") arising from their suppression of the London InterBank Offered Rate ("LIBOR") from August 2007 to May 2010 (the "Relevant Period").

2. The Schwab Funds' claims are made on information and belief (except as to allegations specifically pertaining to the Funds and their counsel, which are made on personal knowledge) based on the investigation conducted by and under the supervision of the Funds' counsel. That investigation included reviewing and analyzing information concerning Defendants and LIBOR, which the Funds (through their counsel) obtained from, among other sources:

(i) analyses by consulting experts engaged by Schwab Funds and other plaintiffs in these coordinated proceedings, which show that, contrary to fundamental principles of economics and finance, during the Relevant Period LIBOR deviated from other well-established benchmarks of Defendants' costs of borrowing, namely (a) those banks' respective probabilities of default and (b) the Federal Reserve Eurodollar Deposit Rate;

(ii) publicly available press releases, news articles, and other media reports (whether disseminated in print or by electronic media);

(iii) filings Defendants made to the United States Securities and Exchange Commission ("SEC");

(iv) court documents submitted in LIBOR-related proceedings in Canada, Singapore, and Japan; and

(v) scholarly literature concerning the potential manipulation of LIBOR during the Relevant Period.

3. Those sources, considered collectively, support the Schwab Funds' allegations that Defendants collusively and systematically suppressed LIBOR during the Relevant Period, so that the interest rates or returns on (i) LIBOR-based floating-rate notes and (ii) fixed-rate notes with a remaining maturity of 5-365 days that were affected by LIBOR (collectively, "LIBOR-based financial instruments") were lower than they otherwise would have been absent Defendants' misconduct, thus the Funds did not receive their rightful payments on those instruments.

4. Except as alleged in this Complaint, neither the Schwab Funds nor other members of the public have access to the underlying facts relating to Defendants' improper activities. Rather, that information lies exclusively within the possession, custody, or control of Defendants and other insiders, which prevents the Funds from further detailing Defendants' misconduct. Moreover, numerous pending government investigations—both domestically and abroad, including by the United States Department of Justice ("DOJ"), the Commodity Futures Trading Commission ("CFTC"), and the SEC—concerning potential LIBOR manipulation could yield information from Defendants' internal records or personnel that bears significantly on the Funds' claims. Indeed, as one news report observed in detailing U.S. regulators' ongoing investigation, "[i]nternal bank emails may prove to be key evidence . . . because of the difficulty in proving that banks reported borrowing costs for Libor at one rate and obtained funding at

another."[1] The Schwab Funds thus believe further evidentiary support for their allegations will come to light after a reasonable opportunity for discovery.

NATURE OF THE ACTION

5. This case arises from the manipulation of LIBOR for the U.S. dollar ("USD-LIBOR" or simply "LIBOR")[2]—the reference point for determining interest rates for trillions of dollars in financial instruments—by a cadre of prominent financial institutions. Defendants perpetrated a scheme to depress LIBOR for two primary reasons. First, well aware that the interest rate a bank pays (or expects to pay) on its debt is widely, if not universally, viewed as embodying the market's assessment of the risk associated with the bank, Defendants understated their borrowing costs to the BBA (thereby suppressing LIBOR) to portray themselves as economically healthier than they actually were—of particular importance given investors' trepidation in light of the widespread market turmoil that occurred during part of the Relevant Period. Indeed, in an April 10, 2008 report, analysts at Citigroup Global Markets Inc. posited the "liquidity crisis" had "created a situation where LIBOR at times no longer represents the level at which banks extend loans to others"; specifically, the analysts concluded LIBOR "may understate actual interbank lending costs by 20-30bp [basis points]."[3] Second, artificially suppressing LIBOR allowed Defendants to pay lower interest rates on LIBOR-based financial instruments that Defendants sold to investors, including the Schwab Funds, during the Relevant Period.

[1] David Enrich, Carrick Mollenkamp & Jean Eaglesham, "U.S. Libor Probe Includes BofA, Citi, UBS," *MarketWatch*, March 17, 2011.

[2] While the term "LIBOR" generally encompasses rates with respect to numerous currencies (which are separately referred to as, for example, USD-LIBOR or Yen-LIBOR), for convenience the Schwab Funds use the term "LIBOR" to reference USD-LIBOR.

[3] Scott Peng, Chintan (Monty) Gandhi, & Alexander Tyo, "Special Topic: Is LIBOR Broken?", April 10, 2008 (published by Citigroup Global Markets Inc.)

6. Each business day, Thomson Reuters calculates LIBOR—a set of reference or benchmark interest rates priced to different ranges of maturity, from overnight to one year—on behalf of the British Bankers' Association ("BBA"), which first began setting LIBOR on January 1, 1986. During most of the Relevant Period, the BBA established LIBOR based on the rates 16 major banks, including Defendants, reported as their costs of borrowing.[4] Every day, the banks responded to the BBA's question: "At what rate could you borrow funds, were you to do so by asking for and then accepting inter-bank offers in a reasonable market size just prior to 11 am?" On its website, the BBA explains "a bank will know what its credit and liquidity risk profile is from rates at which it has dealt and can construct a curve to predict accurately the correct rate for currencies or maturities in which it has not been active." The banks informed the BBA of their costs of borrowing funds at different maturity dates (e.g., one month, three months, six months). The BBA discarded the upper four and lower four quotes and set LIBOR by calculating the mean value of the remaining middle eight quotes, known as an "inter-quartile" methodology. Thomson Reuters then published LIBOR, also reporting the quotes on which the BBA based its LIBOR calculation.

7. As "the primary benchmark for short term interest rates globally,"[5] LIBOR has occupied (and continues to occupy) a crucial role in the operation of financial markets. For example, market participants commonly set the interest rate on floating-rate notes as a spread against LIBOR (e.g., "LIBOR + [X] bps")[6] and use LIBOR as a basis to determine the correct

[4] On February 9, 2009, Société Générale replaced Defendant HBOS on the BBA's USD-LIBOR panel. In February 2011, in response to concerns about possible LIBOR manipulation, the BBA added four more banks to the panel. On August 1, 2011, Defendant WestLB, at its request, was removed from the panel. As of December 2011, the USD-LIBOR panel consisted of 18 banks.

[5] http://www.bbalibor.com/bbalibor-explained/the-basics, last accessed on April 19, 2012.

[6] The term "bps" stands for basis points. 100 basis points equal 1%.

rate of return on short-term fixed-rate notes (by comparing the offered rate to LIBOR). Additionally, the pricing and settlement of Eurodollar futures and options—the most actively traded interest-rate futures contracts on the Chicago Mercantile Exchange—are based on the three-month LIBOR. LIBOR thus affects the pricing of trillions of dollars' worth of financial transactions, rendering it, in the BBA's own words, "the world's most important number."[7]

8. Accordingly, it is well-established among market participants that, as *The Wall Street Journal* has observed, confidence in LIBOR "matters, because the rate system plays a vital role in the economy."[8] Moreover, given the vast universe of financial instruments LIBOR impacts, "even a small manipulation" of the rate "could potentially distort capital allocations all over the world."[9]

9. Throughout the Relevant Period, Defendants betrayed investors' confidence in LIBOR, as these financial institutions conspired to, and did, suppress LIBOR by underreporting to the BBA the actual interest rates at which the Defendant banks expected they could borrow funds—i.e., their true costs of borrowing—on a daily basis. The BBA then relied on the false information Defendants provided to set LIBOR. By acting together and in concert to knowingly understate their true borrowing costs, Defendants caused LIBOR to be set artificially low.

10. Defendants' suppression of LIBOR allowed them to pay unduly low interest rates to investors, including the Schwab Funds, on LIBOR-based financial instruments sold

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[7] BBA press release, "BBA LIBOR: the world's most important number now tweets daily," May 21, 2009, available at http://www.bbalibor.com/news-releases/bba-libor-the-worlds-most-important-number-now-tweets-daily, last accessed on April 28, 2012.

[8] Carrick Mollenkamp and Mark Whitehouse, "Study Casts Doubt on Key Rate --- WSJ Analysis Suggests Banks May Have Reported Flawed Interest Data for Libor," *The Wall Street Journal*, May 29, 2008.

[9] Rosa M. Abrantes-Metz and Albert D. Metz, "How Far Can Screens Go in Distinguishing Explicit from Tacit Collusion? New Evidence from the Libor Setting," *CPI Antitrust Chronicle*, March 2012.

during the Relevant Period. Investors—who until recently had no reason to suspect Defendants' knowing suppression of LIBOR—justifiably believed the financial instruments they were purchasing derived from a rate that was based on USD-LIBOR panel members' honest and reasonable assessments of their borrowing costs. To the contrary, Defendants—in the debt-instrument context, the borrowers—surreptitiously bilked investors—the lenders—of their rightful rates of return on their investments, reaping hundreds of millions, if not billions, of dollars in ill-gotten gains. Moreover, by understating their true borrowing costs, Defendants provided a false or misleading impression of their financial strength to investors and the rest of the market.

11. Defendants' manipulation depressed returns on various types of financial instruments, including notes Defendants issued to raise capital during the Relevant Period. In addition to floating-rate notes, whose interest rates are specifically set as a variable amount over LIBOR, market participants use LIBOR as the starting point for negotiating rates of return on short-term fixed-rate instruments, such as fixed-rate notes maturing in one year or less. Thus, by suppressing LIBOR, Defendants ensured that artificially low interest rates would attach to fixed-rate and variable notes.

12. During the Relevant Period, the Schwab Funds acquired billions of dollars' worth of LIBOR-based financial instruments from Defendants and other issuers, which paid artificially low returns to the Funds due to Defendants' suppression of LIBOR.

13. The Schwab Funds now seek relief for the damages they have suffered as a result of Defendants' violations of federal and state law. The Funds assert claims under the Sherman Act, 15 U.S.C. §§ 1 *et seq.*; the Clayton Act, 15 U.S.C. §§ 12 *et seq.*; RICO, 18 U.S.C. §§ 1961 *et seq.*; and the statutory and common law of California.

JURISDICTION AND VENUE

14. This Court has jurisdiction over the subject matter of this action under Sections 4 and 16 of the Clayton Act, 15 U.S.C. §§ 15 & 26(a), as well as under 28 U.S.C. §§ 1331 and 1337. The Court may exercise supplemental jurisdiction, in accordance with 28 U.S.C. § 1367, over the Schwab Funds' state-law claims.

15. This Court has personal jurisdiction over all of the Defendants by virtue of their business activities in this jurisdiction.

16. The Northern District of California, where the Schwab Funds commenced suit, was a proper venue under Section 1965 of RICO (18 U.S.C. § 1965) and under 28 U.S.C. § 1391(b), (c), and (d), as each Defendant transacted business in that District and a substantial part of the events or omissions giving rise to the Funds' claims occurred in that District. Venue is also proper in the Southern District of New York, as the Schwab Funds' case was transferred here by order of the Judicial Panel on Multidistrict Litigation.

THE PARTIES

Plaintiffs

17. Plaintiff Schwab Money Market Fund is a series of The Charles Schwab Family of Funds, an open-end investment management company organized as a Massachusetts business trust on October 20, 1989. Schwab Money Market Fund purchased or held LIBOR-based financial instruments during the Relevant Period and has been damaged by Defendants' misconduct.

18. Plaintiff Schwab Value Advantage Money Fund, a series of The Charles Schwab Family of Funds, purchased or held LIBOR-based financial instruments during the Relevant Period and has been damaged by Defendants' misconduct.

19. Plaintiff Schwab Retirement Advantage Money Fund, a series of The Charles

Schwab Family of Funds, purchased or held LIBOR-based financial instruments during the Relevant Period and has been damaged by Defendants' misconduct.

20. Plaintiff Schwab Investor Money Fund, a series of The Charles Schwab Family of Funds, purchased or held LIBOR-based financial instruments during the Relevant Period and has been damaged by Defendants' misconduct.

21. Plaintiff Schwab Cash Reserves, a series of The Charles Schwab Family of Funds, purchased or held LIBOR-based financial instruments during the Relevant Period and has been damaged by Defendants' misconduct.

22. Plaintiff Schwab Advisor Cash Reserves, a series of The Charles Schwab Family of Funds, purchased or held LIBOR-based financial instruments during the Relevant Period and has been damaged by Defendants' misconduct.

23. Plaintiff Schwab YieldPlus Fund is a series of Schwab Investments, an open-end investment management company organized as a Massachusetts business trust on October 26, 1990. Contingent interests of Schwab YieldPlus Fund have passed to Plaintiff Schwab YieldPlus Fund Liquidation Trust. Schwab YieldPlus Fund purchased or held LIBOR-based financial instruments during the Relevant Period and has been damaged by Defendants' misconduct.

Defendants

24. Defendant Bank of America Corporation is a Delaware corporation headquartered in Charlotte, North Carolina. Defendant Bank of America, N.A.—a federally-chartered national banking association headquartered in Charlotte, North Carolina—is an indirect, wholly-owned subsidiary of Defendant Bank of America Corporation. Defendants Bank of America Corporation and Bank of America, N.A. are referenced collectively in this Complaint as "Bank of America."

25. Defendant Bank of Tokyo-Mitsubishi UFJ Ltd. ("BTMU") is a Japan company

headquartered in Tokyo, Japan.

26. Defendant Barclays Bank plc ("Barclays") is a British public limited company headquartered in London, England.

27. Defendant Citigroup, Inc. is a Delaware corporation headquartered in New York, New York. Defendant Citibank, N.A.—a federally-chartered national banking association headquartered in New York, New York—is a wholly-owned subsidiary of Defendant Citigroup, Inc. Defendants Citigroup, Inc. and Citibank, N.A. are referenced collectively in this Complaint as "Citibank."

28. Defendant Coöperatieve Centrale Raiffeisen-Boerenleenbank B.A. ("Rabobank") is a financial services provider headquartered in Utrecht, the Netherlands.

29. Defendant Credit Suisse Group AG ("Credit Suisse") is a Swiss company headquartered in Zurich, Switzerland.

30. Defendant Deutsche Bank AG ("Deutsche Bank") is a German financial services company headquartered in Frankfurt, Germany.

31. Defendant HSBC Holdings plc is a United Kingdom public limited company headquartered in London, England. Defendant HSBC Bank plc—a United Kingdom public limited company headquartered in London, England—is a wholly-owned subsidiary of Defendant HSBC Holdings plc. Defendants HSBC Holdings plc and HSBC Bank plc are referenced collectively in this Complaint as "HSBC."

32. Defendant JPMorgan Chase & Co. is a Delaware corporation headquartered in New York, New York. Defendant JPMorgan Chase Bank, National Association—a federally-chartered national banking association headquartered in New York, New York—is a wholly-owned subsidiary of Defendant JPMorgan Chase & Co. Defendants JPMorgan Chase & Co. and

JPMorgan Chase Bank, National Association are referenced collectively in this Complaint as "JPMorgan Chase."

33. Defendant Lloyds Banking Group plc ("Lloyds") is a United Kingdom public limited company headquartered in London, England. Defendant Lloyds was formed in 2009 through the acquisition of Defendant HBOS plc ("HBOS")—a United Kingdom banking and insurance company headquartered in Edinburgh, Scotland—by Lloyds TSB Bank plc.

34. Defendant Royal Bank of Canada ("RBC") is a Canada company headquartered in Toronto, Canada.

35. Defendant The Norinchukin Bank ("Norinchukin") is a Japanese cooperative bank headquartered in Tokyo, Japan.

36. Defendant The Royal Bank of Scotland Group plc ("RBS") is a United Kingdom public limited company headquartered in Edinburgh, Scotland.

37. Defendant UBS AG ("UBS") is a Swiss company based in Basel and Zurich, Switzerland.

38. Defendant WestLB AG is a German joint stock company headquartered in Dusseldorf, Germany. Defendant Westdeutsche ImmobilienBank AG—a German company headquartered in Mainz, Germany—is a wholly-owned subsidiary of WestLB AG. Defendants WestLB AG and Westdeutsche ImmobilienBank AG are referenced collectively in this Complaint as "WestLB."

39. Defendants Bank of America, BTMU, Barclays, Citibank, Rabobank, Credit Suisse, Deutsche Bank, HSBC, JPMorgan Chase, Lloyds, HBOS, RBC, Norinchukin, RBS, UBS, and WestLB (collectively, "Defendants") were members of the BBA's USD-LIBOR panel during the Relevant Period.

DEFENDANTS SUPPRESSED LIBOR DURING THE RELEVANT PERIOD

40. Throughout the Relevant Period, Defendants conspired to suppress LIBOR below the levels it would have been set had Defendants accurately reported their borrowing costs to the BBA. The Schwab Funds' allegations that Defendants suppressed LIBOR are supported by (i) Defendants' powerful incentives to mask their true borrowing costs and to reap unjustified revenues by setting artificially low interest rates on LIBOR-based financial instruments the Funds and other investors purchased; (ii) independent analysis by the Funds' consulting experts comparing LIBOR panel banks' daily individual quotes with the banks' probability of default (as measured by Kamakura Risk Information Services) and by other plaintiffs' consulting experts showing a discrepancy between LIBOR and the Federal Reserve Eurodollar Deposit Rate; (iii) publicly available economic analyses, by prominent academics and other commentators, of LIBOR's behavior during the Relevant Period compared with other well-accepted, contemporaneous measures of Defendants' borrowing costs, as well as the notable tendency of Defendants' daily submitted LIBOR quotes to "bunch" near the bottom quartile of the collection of reported rates used to determine LIBOR; and (iv) revelations in connection with the numerous domestic and foreign governmental investigations into potential manipulation of USD-LIBOR and LIBOR for other currencies, most prominently Yen-LIBOR.

A. Defendants Possessed Strong Motives To Suppress LIBOR.

41. Defendants each had substantial financial incentives to suppress LIBOR. First, Defendants were motivated, particularly given investors' serious concerns over the stability of the market in the wake of the financial crisis that emerged in 2007, to understate their borrowing costs—and thus the level of risk associated with the banks. Moreover, because no one bank would want to stand out as bearing a higher degree of risk than its fellow banks, each Defendant shared a powerful incentive to collude with its co-Defendants to ensure it was not the "odd man

out." Indeed, analysts at Citigroup Global Markets—a subsidiary of Defendant Citigroup—acknowledged in an April 10, 2008 report:

> [T]he most obvious explanation for LIBOR being set so low is the prevailing fear of being perceived as a weak hand in this fragile market environment. If a bank is not held to transact at its posted LIBOR level, there is little incentive for it to post a rate that is more reflective of real lending levels, let alone one higher than its competitors. Because all LIBOR postings are publicly disclosed, any bank posting a high LIBOR level runs the risk of being perceived as needing funding. With markets in such a fragile state, this kind of perception could have dangerous consequences.[10]

Strategists at entities affiliated with other Defendants likewise confirmed that banks suppressed LIBOR. Echoing the sentiments expressed by Citigroup Global Markets' analysts, William Porter, credit strategist at Credit Suisse, said in April 2008 that he believed the three-month USD-LIBOR was 0.4 percentage points (40 basis points) below where it should be.[11] And the next month, Tim Bond, head of asset-allocation research of Barclays Capital—a division of Defendant Barclays—observed that banks routinely misstated borrowing costs to the BBA to avoid the perception that they faced difficulty raising funds as credit markets seized up.[12]

42. Second, by artificially suppressing LIBOR, Defendants paid lower interest rates on LIBOR-based financial instruments they sold to investors, including the Schwab Funds, during the Relevant Period. Illustrating Defendants' motive to artificially depress LIBOR, in 2009 Citibank reported it would make $936 million in net interest revenue if rates would fall by 25 bps per quarter over the next year and $1.935 billion if they fell 1% instantaneously.

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[10] Scott Peng, Chintan (Monty) Gandhi, & Alexander Tyo, "Special Topic: Is LIBOR Broken?," April 10, 2008.

[11] Carrick Mollenkamp, "Libor Surges After Scrutiny Does, Too," *The Wall Street Journal*, April 18, 2008.

[12] Gavin Finch and Elliott Gotkine, "Libor Banks Misstated Rates, Bond at Barclays Says," *Bloomberg*, May 29, 2008.

JPMorgan Chase likewise reported significant exposure to interest rates in 2009: The bank stated that if interest rates increased by 1%, it would lose over $500 million. HSBC and Lloyds also estimated they would earn hundreds of millions of additional dollars in 2008-2009 in response to lower interest rates and would lose comparable amounts in response to higher rates. These banks collectively earned billions in net interest revenues during the Relevant Period.

43. Defendants thus possessed reputational and financial incentives to manipulate LIBOR—which, as detailed below, they did.

B. <u>Independent Analyses By Consulting Experts Engaged By the Schwab Funds and Other Plaintiffs In These Coordinated Proceedings Strongly Indicate Defendants Artificially Suppressed LIBOR During the Relevant Period.</u>

44. The Schwab Funds' consulting experts, as well as consulting experts engaged by other plaintiffs in these coordinated proceedings, have measured LIBOR against other recognized benchmarks for determining banks' borrowing costs. Employing well-reasoned methodologies, these consultants have provided analyses indicating Defendants artificially suppressed LIBOR during the Relevant Period, as LIBOR did not appropriately correspond with other measures of Defendants' borrowing costs. Specifically, the consulting experts have observed (i) the difference between Defendants' respective LIBOR quotes and their probabilities of default (which measure the banks' respective levels of credit risk); and (ii) the spread between LIBOR and the Federal Reserve Eurodollar Deposit Rate. Those analyses, considered collectively, strongly indicate Defendants suppressed LIBOR throughout the Relevant Period.

1. <u>An independent analysis by the Schwab Funds' consulting experts—showing the discrepancy between Defendants' LIBOR quotes and their respective probabilities of default—strongly indicates LIBOR was suppressed during the Relevant Period.</u>

45. Assessing the likelihood that LIBOR was suppressed during the Relevant Period, the Schwab Funds' expert consultants compared USD-LIBOR panel members' quotes from 2007

through 2008 to the daily default probability estimates for each of those banks—as determined, and updated daily for each maturity (term), by Kamakura Risk Information Services ("KRIS").[13] The study focused on identifying any periods of severe discrepancy between each bank's probabilities of default ("PDs") and the LIBOR quotes the bank submitted to the BBA.

46. The KRIS reduced-form model estimates each bank's default risk on a daily basis by analyzing each bank's equity and bond prices, accounting information, and general economic conditions, such as the level of interest rates, unemployment rates, inflation rates, etc. On its website, KRIS states it "provides a full term structure of default for both corporate and sovereign credit names based upon a multiple models approach" and its default probabilities "are updated daily and cover more than 29,000 companies in 36 countries."[14]

47. PD provides a measure of a bank's credit (default) risk exposure, essentially the likelihood that the bank will default within a specified time period. PD can be estimated using statistical models, whereas LIBOR is a rate of return required by investors lending short-term funds to the bank. A finding of a statistically significant negative correlation coefficient between daily LIBOR quotes and PDs for a given bank over a given term period violates the fundamental relationship between risk and return that is the cornerstone of finance. That is, investors require a higher required rate of return as a premium for taking on additional risk exposure. This results in a positive relationship (correlation) between risk and return. An increase in the bank's PD indicates that the risk of default has increased, thereby causing investors to require a higher rate of return for loans to the bank—which should correspond with a higher LIBOR quote.

48. Accordingly, a finding of a statistically significant negative coefficient (of any

[13] KRIS did not have PDs for Defendants WestLB, Rabobank, or Norinchukin, because those companies were not publicly traded. This PD analysis therefore does not include those banks.

[14] *See* http://www.kris-online.com/, last accessed on April 23, 2012.

size) between a bank's daily LIBOR quotes and its PDs shows that increases in PDs correspond with decreases in LIBOR quotes—which violates fundamental finance theory. This would indicate that banks are suppressing their LIBOR quotes to avoid revealing the higher rates that reflect their true (higher) probabilities of default. In other words, any finding of negative, statistically significant correlation coefficients between a bank's PDs and its LIBOR quotes suggests LIBOR suppression by the bank over the analysis period.

49. The magnitude of the correlation coefficient is impacted by the volatility of both PD and LIBOR for each bank during the time period. Thus, for example, if a bank has high volatility in its PDs, the absolute value of the correlation coefficient will tend to be lower (i.e., less negative) as compared to an identical bank with low PD volatility. However, both may be equally engaged in LIBOR suppression if their correlation coefficients are statistically significant and negative.

50. The Schwab Funds' consulting experts used the KRIS database to test whether, for the period under study, each bank's daily sealed LIBOR quote correlates with the bank's estimated PD that day for the same maturity term (provided by KRIS). For example, the consultants examined the correlation between Bank of America's sealed quote for three-month LIBOR on each date with the three-month PD for Bank of America, as provided by the KRIS database on that same day. As explained above, standard finance theory implies that a positive correlation between a bank's PD and its LIBOR quote should exist—i.e., as the bank's default risk (PD) increases, its borrowing rate (LIBOR quote) should increase, and *vice versa*. That is, using the above example, standard finance theory predicts a positive correlation between Bank of America's three-month PD and its three-month LIBOR quote. A finding of either a zero or negative correlation between a bank's PD and its LIBOR quote indicates the latter does not

reflect the bank's default-risk probability, which indicates LIBOR suppression. A negative correlation means the two values have an inverse relationship; as one goes up, the other tends to go down. A statistically significant negative correlation between a bank's LIBOR quote and its PD is consistent with the bank's reducing its LIBOR quote in order to mask its higher risk exposure during a period of financial crisis, such as during the 2007-2008 period. By submitting an artificially low LIBOR quote, the bank sends a false signal that it is less risky than it truly is.

51. The Schwab Funds' consulting experts found suppression over the 2007-2008 period for one-month, three-month, six-month, and 12-month LIBOR.

52. The LIBOR quotes for all the reporting banks (except HSBC) during 2007 were *negatively correlated* with their daily updated PDs (for the same maturity term) to a statistically significant degree. For example, the correlation between Bank of America's daily LIBOR quotes and its daily PDs was negative and statistically significant at a very high level for the one-month, three-month, six-month and 12-month terms, i.e., between -0.5857 and -0.6093.[15] In other words, the data indicate that, contrary to fundamental finance theory, the higher a panel bank's PD was, the *lower* its LIBOR quote was.

53. Performing the same analysis with respect to the LIBOR panel banks' daily LIBOR quotes and PDs during 2008, the expert consultants found that for all of the banks, the submitted LIBOR quotes were negatively correlated with their PDs at the one-month and three-month maturities. Indeed, all of the banks were submitting unduly low LIBOR quotes at all maturities during the time period from August 9, 2007 until September 12, 2008, and, with only one exception, from September 15 through December 31, 2008, the period following the Lehman

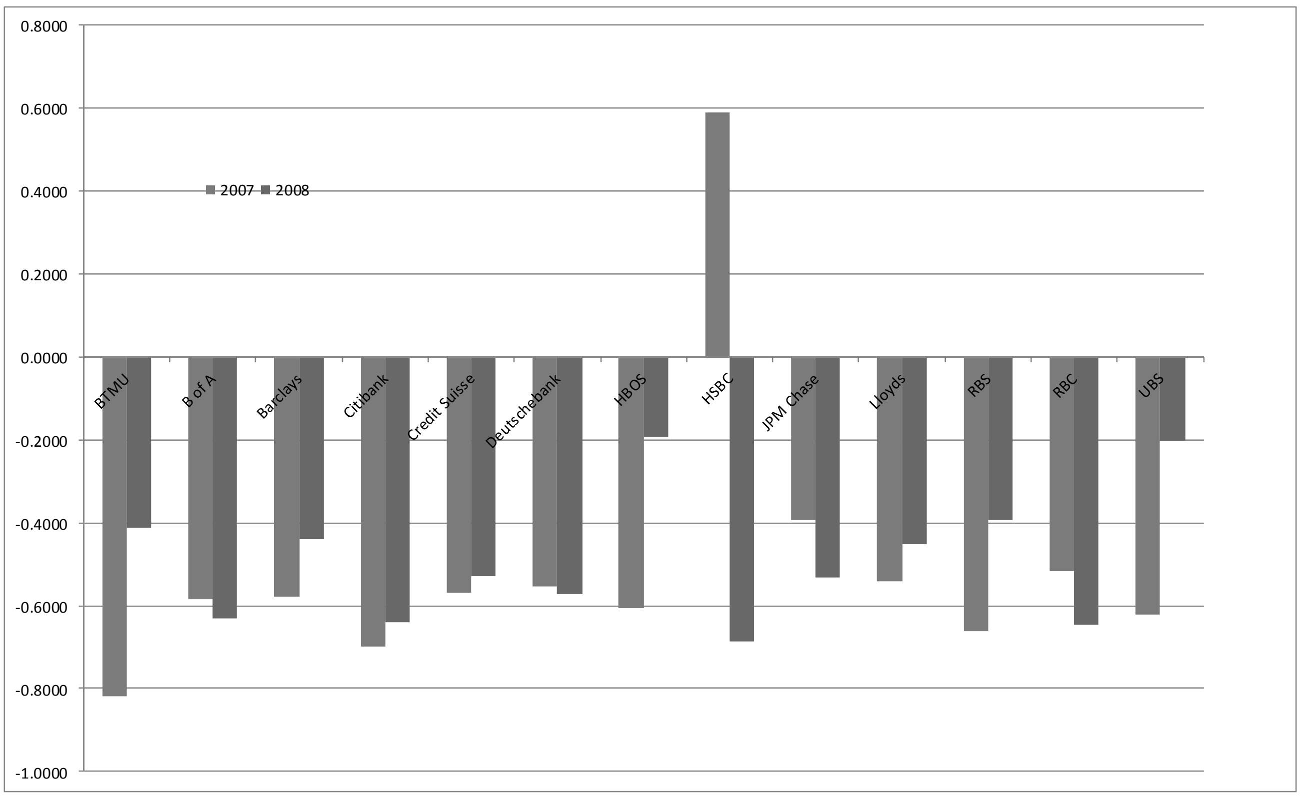
[15] Correlation coefficients range from a value of -1 to 1. A correlation coefficient of -0.50, for example, would imply that a 1% increase in PD would result in a 50-basis point decline in the bank's LIBOR quote.

bankruptcy.

54. The following graphs illustrate the findings of this expert analysis—which demonstrates a striking negative correlation between USD-LIBOR panel banks' LIBOR quotes and PDs during 2007 and 2008, indicating they severely depressed LIBOR during that time.

Graph 1

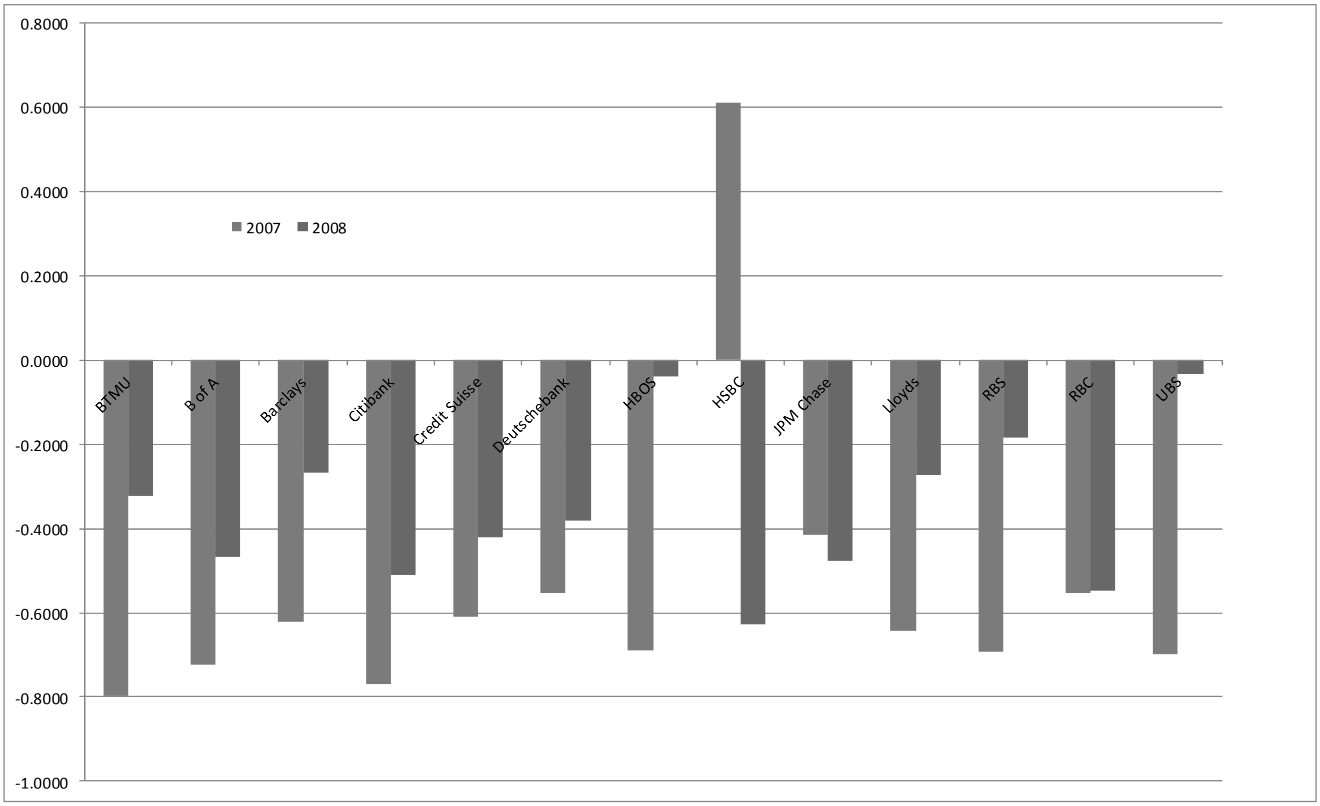
Correlation Coefficients
Between Each Bank's Daily LIBOR Bid and Probability of Default (PD)
One-Month Term



(Note: PDs are estimated daily using the reduced form model of Kamakura Risk Information Services.)

Graph 2

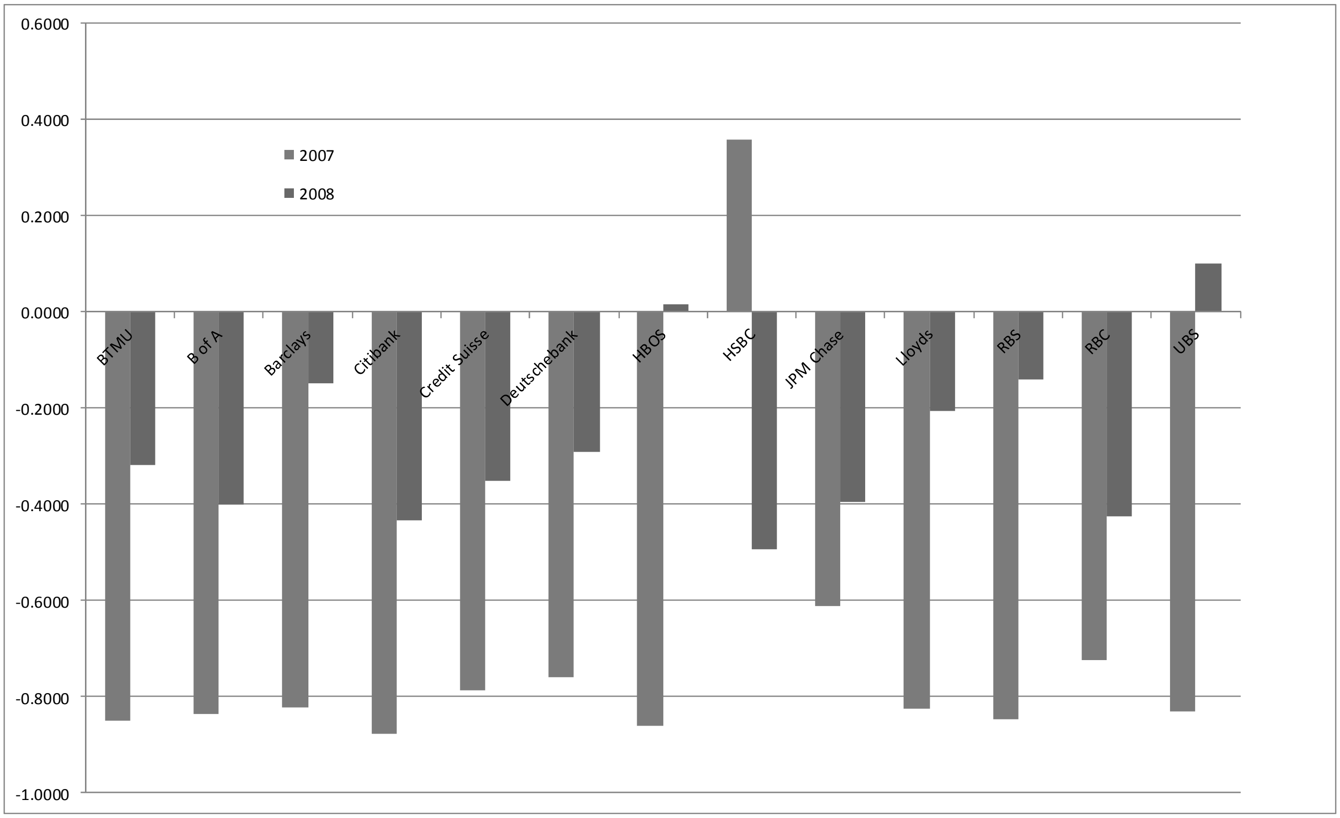
Correlation Coefficients
Between Each Bank's Daily LIBOR Bid and Probability of Default (PD)
Three-Month Term



(Note: PDs are estimated daily using the reduced form model of Kamakura Risk Information Services.)

<u>Graph 3</u>

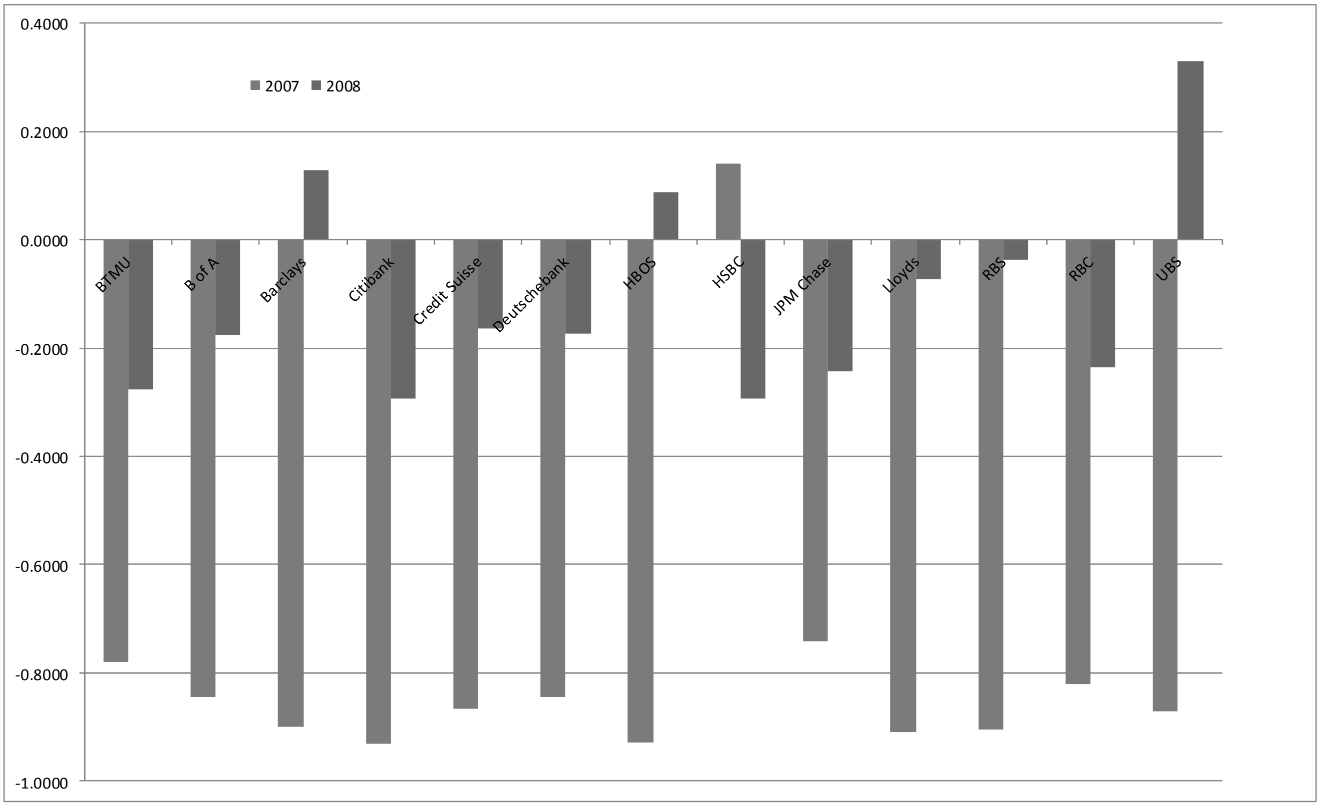
Correction Coefficients



(Note: PDs are estimated daily using the reduced form model of Kamakura Risk Information Services.)

Graph 4

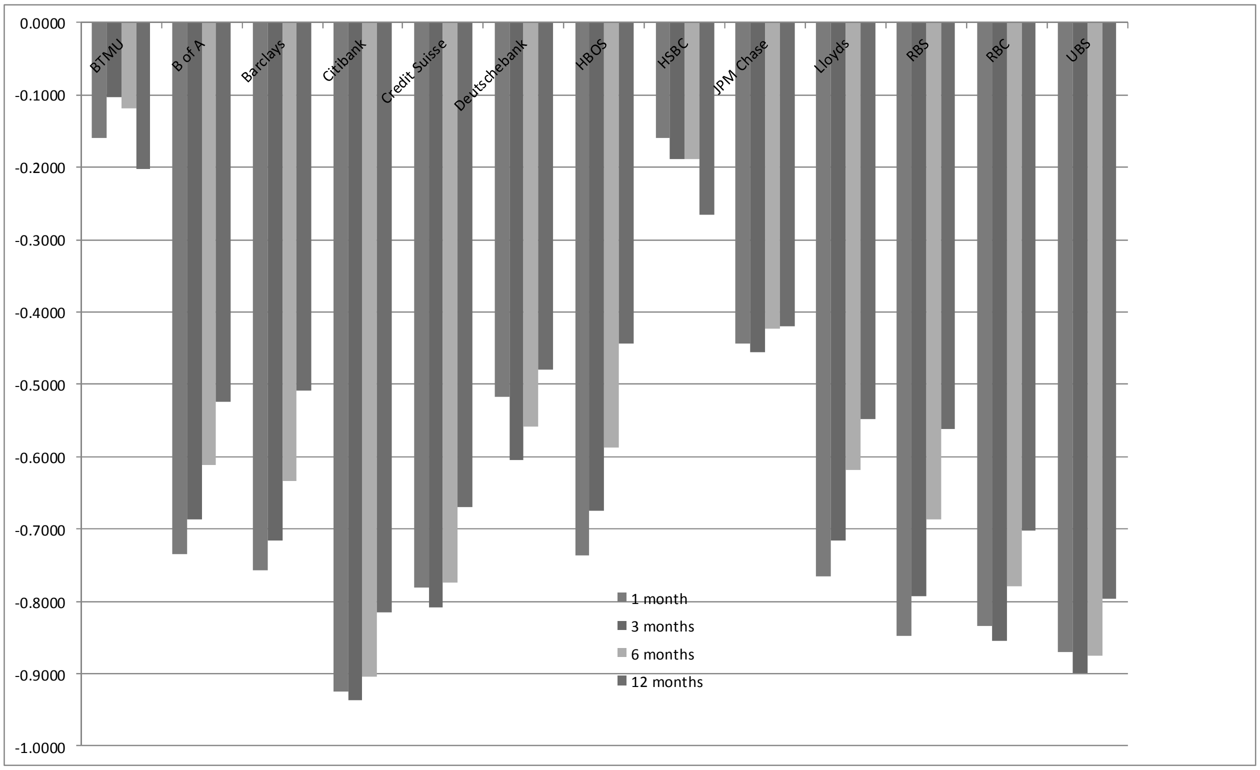
Correlation Coefficients
Between Each Bank's Daily LIBOR Bid and Probability of Default (PD)
Twelve-Month Term



(Note: PDs are estimated daily using the reduced form model of Kamakura Risk Information Services.)

Graph 5

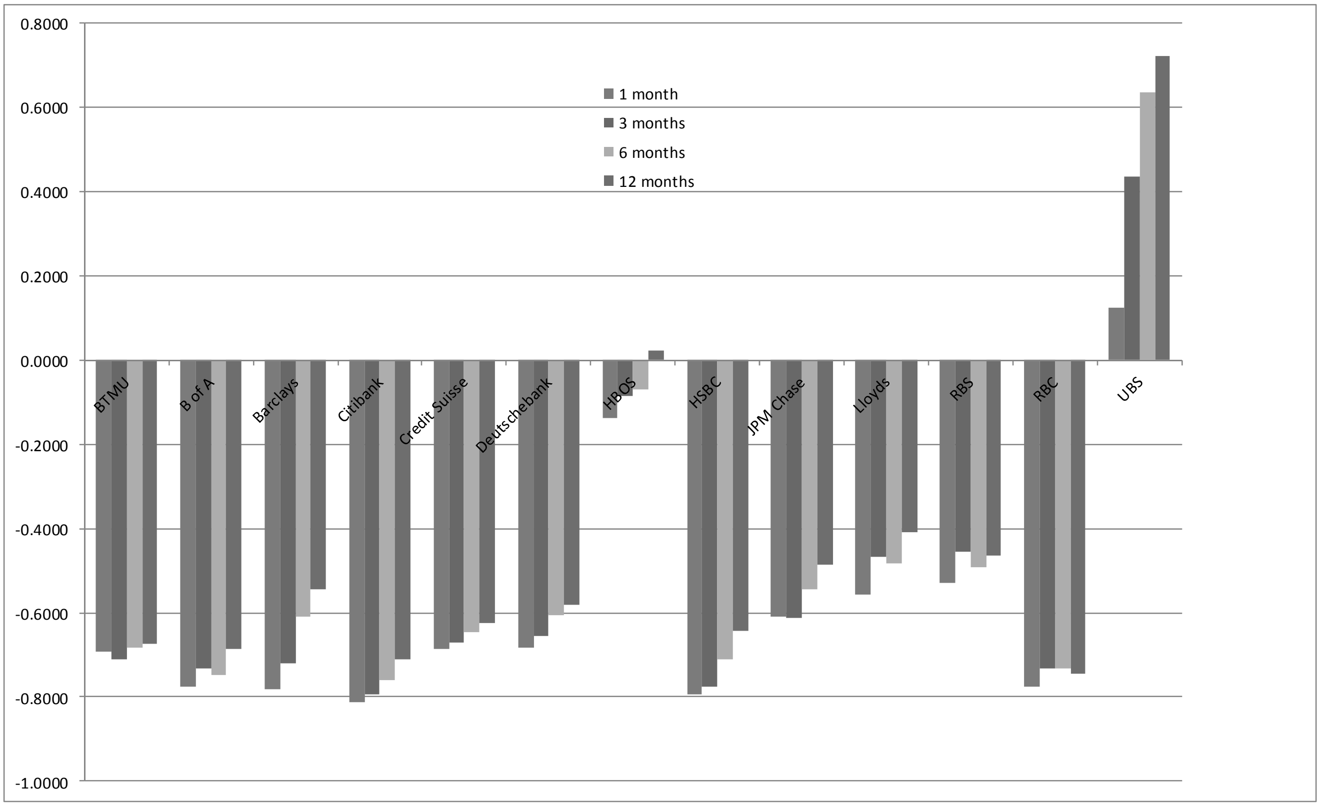
Correlation Coefficients
Between Each Bank's Daily LIBOR Bid and Probability of Default (PD)
9 August 2007 – 12 September 2008 Period



(Note: PDs are estimated daily using the reduced form model of Kamakura Risk Information Services.)

Graph 6

Correlation Coefficients
Between Each Bank's Daily LIBOR Bid and Probability of Default (PD)
15 September 2008 – 31 December 2008 Period



(Note: PDs are estimated daily using the reduced form model of Kamakura Risk Information Services.)

2. **The discrepancy between LIBOR and the Federal Reserve Eurodollar Deposit Rate during the Relevant Period suggests Defendants collusively suppressed LIBOR.**

55. As demonstrated by the work of an independent consulting expert retained by counsel in these actions, analysis of the Eurodollar market strongly supports that Defendants suppressed their LIBOR quotes and colluded to suppress reported LIBOR rates. Moreover, this analysis further supports that Defendants colluded to control the amount of suppression over the Relevant Period.

56. The U.S. Federal Reserve prepares and publishes Eurodollar deposit rates for banks (the "Federal Reserve Eurodollar Deposit Rate"). These Eurodollar deposit rates are analogous to LIBOR in that they reflect the rates at which banks in the London Eurodollar money market lend U.S. dollars to one another, just as LIBOR is intended to reflect rates at which panel banks in the London interbank market lend U.S. dollars to one another. The Federal Reserve obtains its data from Bloomberg and the ICAP brokerage company.[16] Bloomberg Eurodollar deposit rate is similar to BBA's LIBOR except that the sampling is not limited to the 16 banks chosen by BBA. ICAP is a large broker-dealer in London in Eurodollar deposits.[17] ICAP surveys its client banks and updates its Eurodollar deposit rates about 9:30 AM each morning.

57. While Defendants could have access to the ICAP Eurodollar deposit rates prior to submitting their individual LIBOR quotes at 11:00 each day, they would not — absent collusion — have access to other bank LIBOR quotes, which are confidential until submitted. Thus, even within the context of a suppressed LIBOR, absent collusion, individual panel banks would not know what quote other panel banks intended to submit relative to the Federal Reserve Eurodollar Deposit Rate.

58. The consulting expert determined that because of the nature of the relationship between the Federal Reserve Eurodollar Deposit Rate and LIBOR (detailed below), it would be unusual even for one bank to submit a LIBOR bid below the Federal Reserve's Eurodollar

[16] See http://federalreserve.gov/releases/h15/data.htm, footnote 8. Last visited on April 23, 2012.

[17] "ICAP is the world's premier voice and electronic interdealer broker and the source of global market information and commentary for professionals in the international financial markets. The Group is active in the wholesale markets in interest rates, credit, energy, foreign exchange and equity derivatives. ICAP has an average daily transaction volume in excess of $1.5 trillion, more than 60% of which is electronic. ICAP plc was added to the FTSE 100 Index on 30 June 2006. For more information go to www.icap.com." *See* http://www.icapenergy.com/company/, last accessed on April 30, 2012.

Deposit Rate. For all Defendants to submit bids below the Federal Reserve Eurodollar Deposit Rate would be extremely unusual, and strongly supports evidence of collusion among the banks.

59. Economic and statistical analysis strongly supports the use of the Federal Reserve Eurodollar Deposit rate as a benchmark for measuring the validity of LIBOR as reported by the panel banks. To measure how well the Federal Reserve Eurodollar Deposit Rate and LIBOR move together, for the purposes of this analysis, the difference between the two rates, the "Spread," is calculated as follows: Spread = BBA LIBOR – Federal Reserve Eurodollar Deposit Rate.

60. Since both LIBOR and the Federal Reserve Eurodollar Deposit Rate measure the lending cost to banks of Eurodollar deposits, important market and financial fundamentals, such as day-to-day changes in monetary policy, market risk and interest rates, as well as risk factors facing the banks generally (collectively "Market Fundamentals"), should be reflected similarly on both variables, and therefore should not affect the Spread. The BBA's LIBOR panel is intended to reflect the Eurodollar deposit market in London. By focusing on the Spread, the model therefore should be able to factor out normal and expected co-movements in banks' LIBOR quotes that arise from changes in Market Fundamentals.

61. To analyze how well the Federal Reserve Eurodollar Deposit Rate captures changes in Market Fundamentals and absorbs variations in LIBOR that are driven by such fundamentals, consulting experts used regression analysis to measure the day-to-day changes in the Spread against changes in the T-Bill rate and the commercial paper rate. The evidence from these regressions strongly supports that day-to-day changes in the Federal Reserve Eurodollar Deposit Rate effectively capture day-to-day movements in LIBOR caused by Market Fundamentals. Thus, once the Federal Reserve Eurodollar Deposit Rate is subtracted to arrive at

the Spread, remaining movements in LIBOR reflected in the Spread would be unrelated to movements in Market Fundamentals.

62. Because Market Fundamentals are fully captured by the Spread, absent manipulation, the Spread should always be zero or close to zero. Thus, as more fully discussed below, negative Spreads provide a strong basis to conclude that Defendants suppressed and colluded to artificially suppress LIBOR.[18]

63. Figures 1 and 2 show the relationship between LIBOR, the Federal Reserve Eurodollar Deposit Rate, and the Spread beginning in 2000 and ending in mid 2012. As can be seen, between January 5, 2000 and around August 7, 2007, Federal Reserve's Eurodollar Deposit Rate tracked LIBOR very closely and the Spread remained positive and very close to zero. This finding indicates that the Spread effectively captures shared risks of the banks sampled by BBA and by Bloomberg and ICAP. The validity of this finding is bolstered by the fact that the Spread remained very close to zero in the face of multiple major financial dislocations, including the bursting of the dot-com bubble in 2000, the terrorist attacks of September 2001, and the 2001 U.S. economic recession. Likewise, the unusual downward movements in the Spread starting in August 2007 strongly evidences that LIBOR was being manipulated and suppressed during this period.[19]

[18] It is important to note that to the extent panel banks submitting LIBOR quotes submit suppressed rates to the BBA, and these suppressed rates are also considered by Bloomberg or ICAP, then the resultant Federal Reserve Eurodollar Deposit rate would also be understated by the same suppression. Consequently, the Spread computed above could even understate the true magnitude of the suppression.

[19] The Spread only became consistently positive around the end of October 2011, just after the European Commission raided banks in connection with LIBOR.

Figure 1: LIBOR and Federal Reserve Eurodollar Deposit Rate

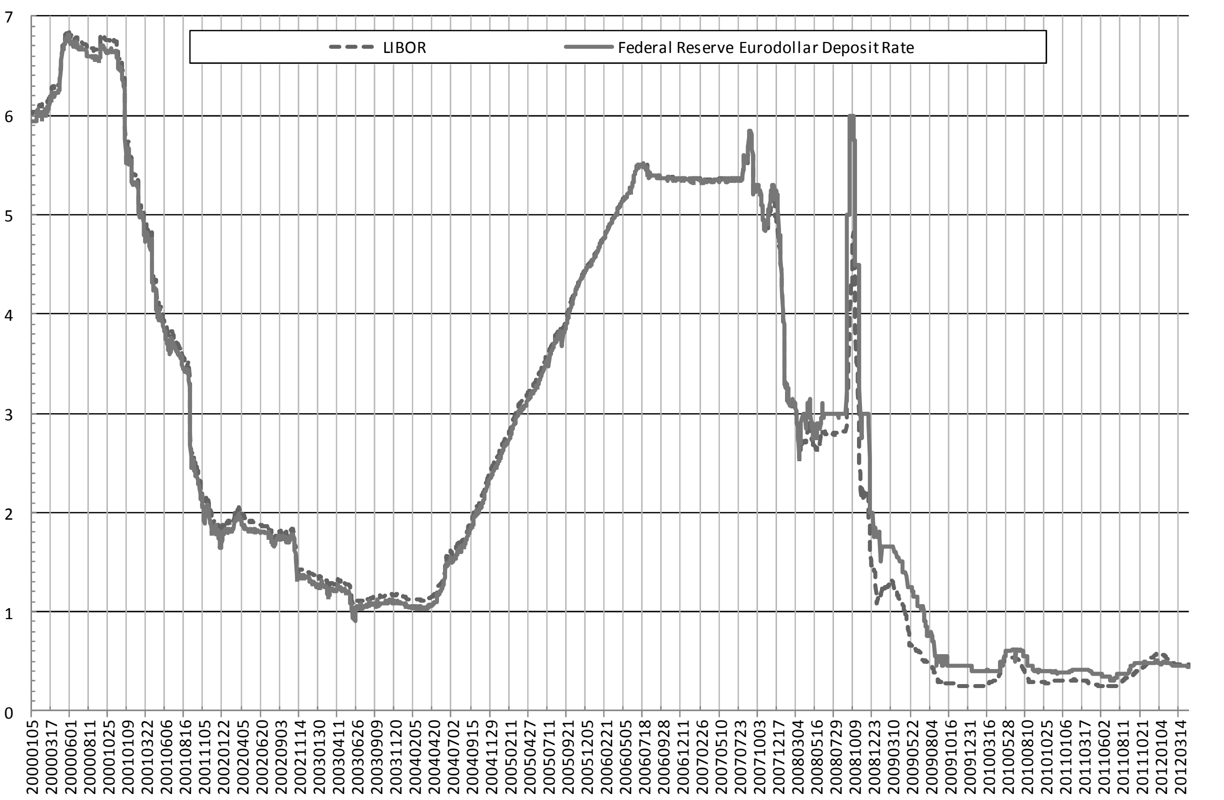
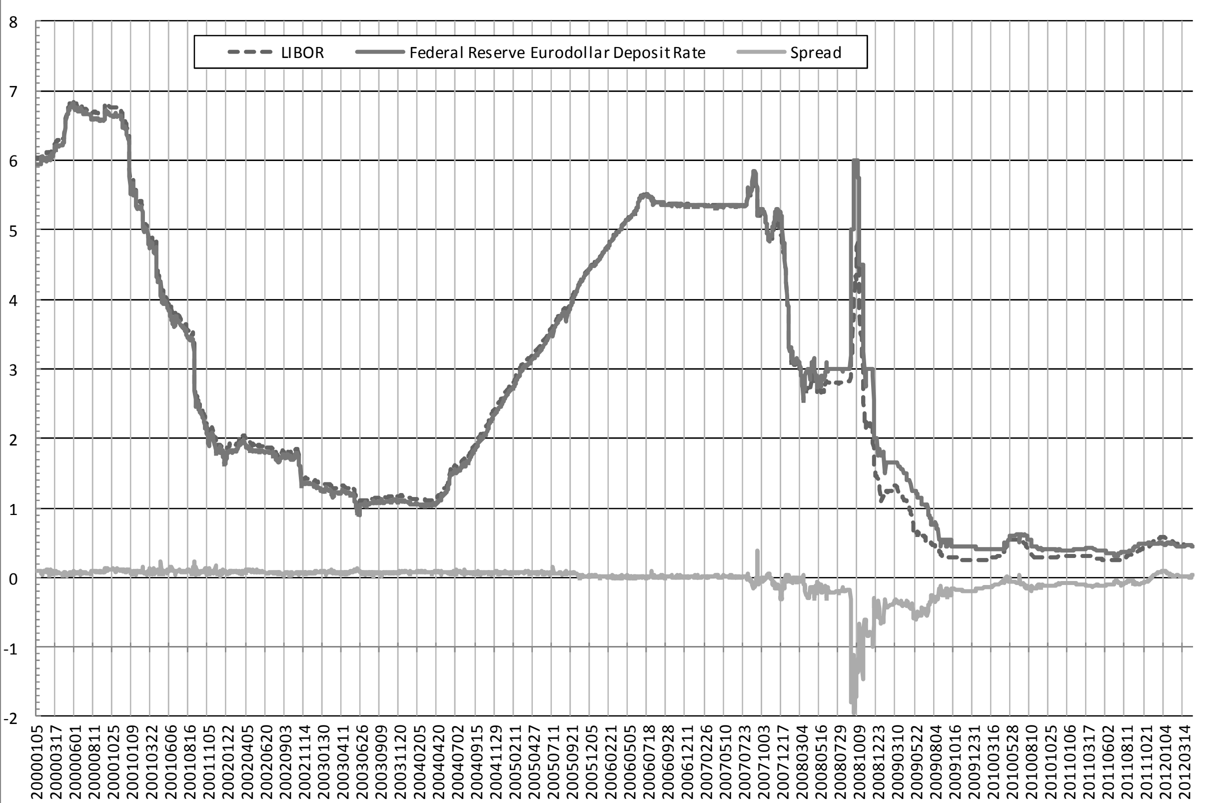
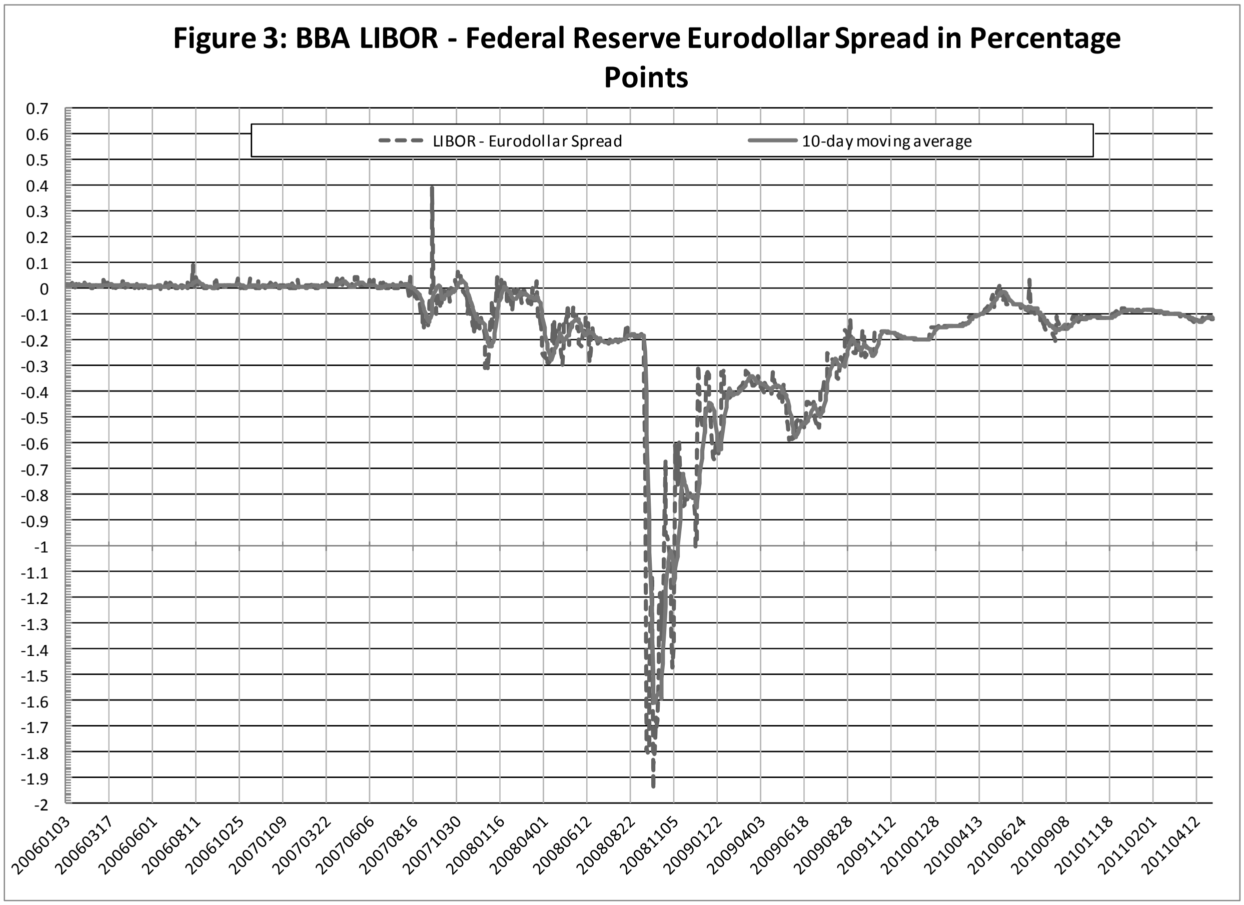


Figure 2: LIBOR and Federal Reserve Eurodollar Deposit Rate



64. Figure 3 shows the Spread between 3-month maturity BBA LIBOR and the Federal Reserve Eurodollar Deposit rate (3-month maturity BBA LIBOR – Federal Reserve Eurodollar Deposit rate), from January 2006 through early April 2012.



65. The shorter period between January 3, 2006 and August 7, 2007 demonstrated above contains 393 trading days. In this sub-period, there were only 3 days when the Spread was negative. Furthermore, the magnitude of these negative Spreads were also very small, equaling -0.9 basis point on June 14, 2006, -0.5 basis point on July 27, 2006 and -0.2 basis point on November 2, 2006.[20] This finding again strongly supports that the Federal Reserve Eurodollar Deposit Rate serves as a good benchmark to control for Market Fundamentals that determine LIBOR. The average magnitude of the Spread during this period equaled less than one basis point. This finding also strongly supports that the risks of the banks sampled by BBA and Bloomberg and ICAP were similar.

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[20] One basis point is one-hundredth of a percentage point.

66. By August 2007, however, the Spread began to move into negative territory. During the early part of August 2007, the Federal Reserve Eurodollar Deposit Rate stayed around 5.36%. On August 8, the Federal Reserve Eurodollar Deposit Rate increased by 5 basis points to 5.41%, while BBA LIBOR did not keep pace. The Spread turned negative 3 basis points on August 8, 2007. The Spread remained mostly negative after August 7 so that by August 15, 2007, the trailing 10-day moving-average of the Spread also turned negative. By August 31, 2007, the Federal Reserve Eurodollar Deposit rate kept increasing to 5.78%, while LIBOR was lagging. The negative Spread on August 31 grew to -16 basis points.

67. The Spread remained negative over the next year. Between August 31, 2007 and September 15, 2008, the Spread remained negative on 234 of the 255 days, or 91.7% of the days. The magnitude of the negative Spread averaged about -12 basis points. During this approximately one year period, the negative Spread exceeded -25 basis points on 18 days.

68. A big shock to LIBOR (and the Spread) came just after Lehman Brothers filed for bankruptcy on September 15, 2008, leading to significantly increased concerns about the health of all banks. The increased concerns about the health of the banks were reflected in substantial increases in the Federal Reserve Eurodollar Deposit Rate. On September 15, 2008, the Federal Reserve Eurodollar Deposit Rate equaled 3.0%, increasing to 3.2%, 3.75%, and 5% on September 16, 17 and 18, respectively. By September 30, the Federal Reserve Eurodollar Deposit Rate doubled to 6%.

69. In spite of increased risks and worries about the banks after the Lehman bankruptcy filing, LIBOR did not keep pace with the Federal Reserve Eurodollar Deposit Rate during this period of heightened concerns, causing the Spread to become more negative. On September 16, 2008, the negative Spread nearly doubled to -32 basis points. The next day, on

September 17, the negative Spread doubled again reaching -69 basis points. On September 18, the negative Spread more than doubled once again reaching -180 basis points. Finally, on September 30, 2008, the negative Spread reached -195 basis points.

70. Thus, between September 15, 2008 and September 30, 2008, the Federal Reserve Eurodollar Deposit Rate increased by 300 basis points to reflect increasing concerns about the banks, while LIBOR increased by less than one-half, or by 123 basis points during the same period. This diversion in the behavior of the two rates strongly supports the finding that Defendants intensified their collusive suppression of the LIBOR, and did so to understate their borrowing costs in the face of increasing concerns about the health of the banks.

71. The Spread remained negative for more than one and a half years following the Lehman filing, until May 17, 2010. As concerns about banks' financial health eased, so did the magnitude of the suppression of LIBOR. As stated earlier, Federal Reserve's Eurodollar Deposit Rate reached 6% on September 30, 2008. With the easing of the financial crisis, Federal Reserve's Eurodollar Deposit Rate fell to 0.45% on May 17, 2010. The average suppression of the LIBOR rate between October 1, 2008 and May 17, 2010 equaled negative 38 basis points. The Spread finally turned positive for the first time during the post-Lehman period on May 17, 2010. Following this date, the Spread again became negative, with the magnitude of the Spread averaging around -10 basis points. The dramatic period of negative Spread during the Relevant Period, following years of uniform behavior between each individual Defendant Bank's LIBOR quote and the Federal Reserve Eurodollar Deposit Rate, is also graphically demonstrated by Figures 4 to 19 below on a bank by bank basis. Every Spread during the period August 8, 2007 to May 17, 2010 is statistically significant at the extremely high 99% confidence level.

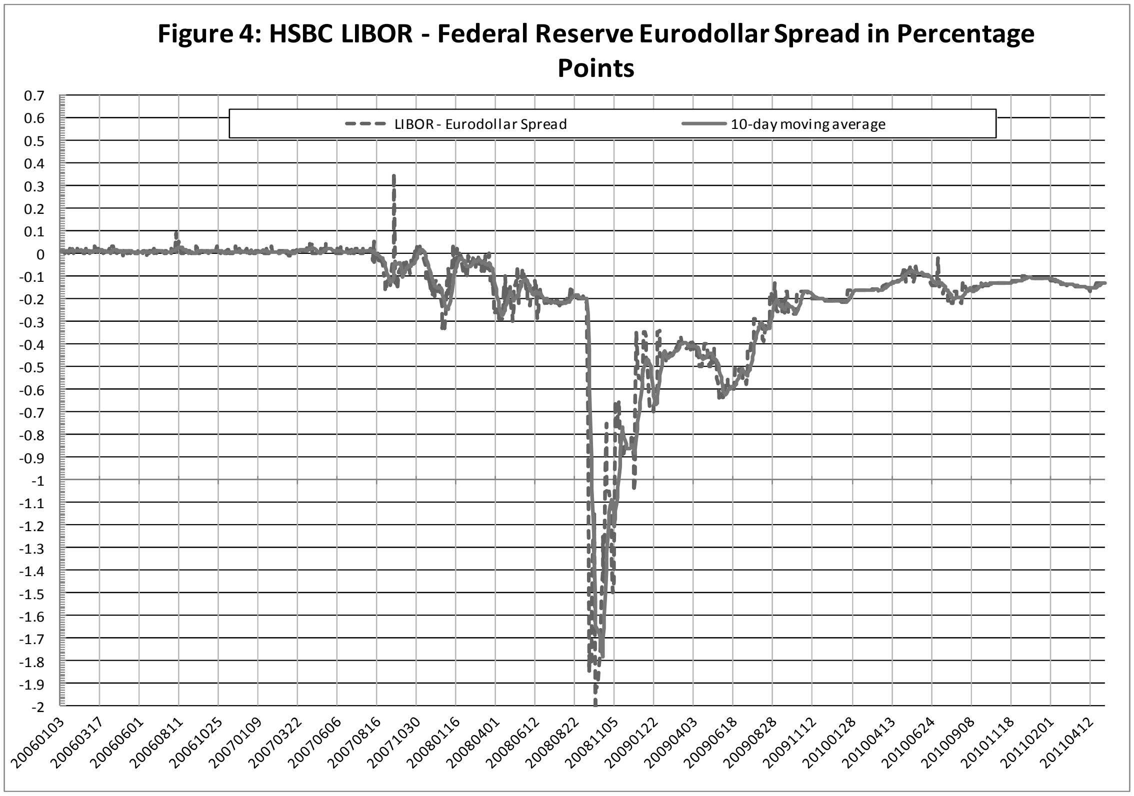
Figure 4: HSBC LIBOR - Federal Reserve Eurodollar Spread in Percentage Points
LIBOR - Eurodollar Spread
10-day moving average
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0
-0.1
-0.2
-0.3
-0.4
-0.5
-0.6
-0.7
-0.8
-0.9
-1
-1.1
-1.2
-1.3
-1.4
-1.5
-1.6
-1.7
-1.8
-1.9
-2
20060103
20060317
20060601
20060811
20061025
20070109
20070322
20070606
20070816
20071030
20080116
20080401
20080612
20080822
20081105
20090122
20090403
20090618
20090828
20091112
20100128
20100413
20100624
20100908
20101118
20110201
20110412

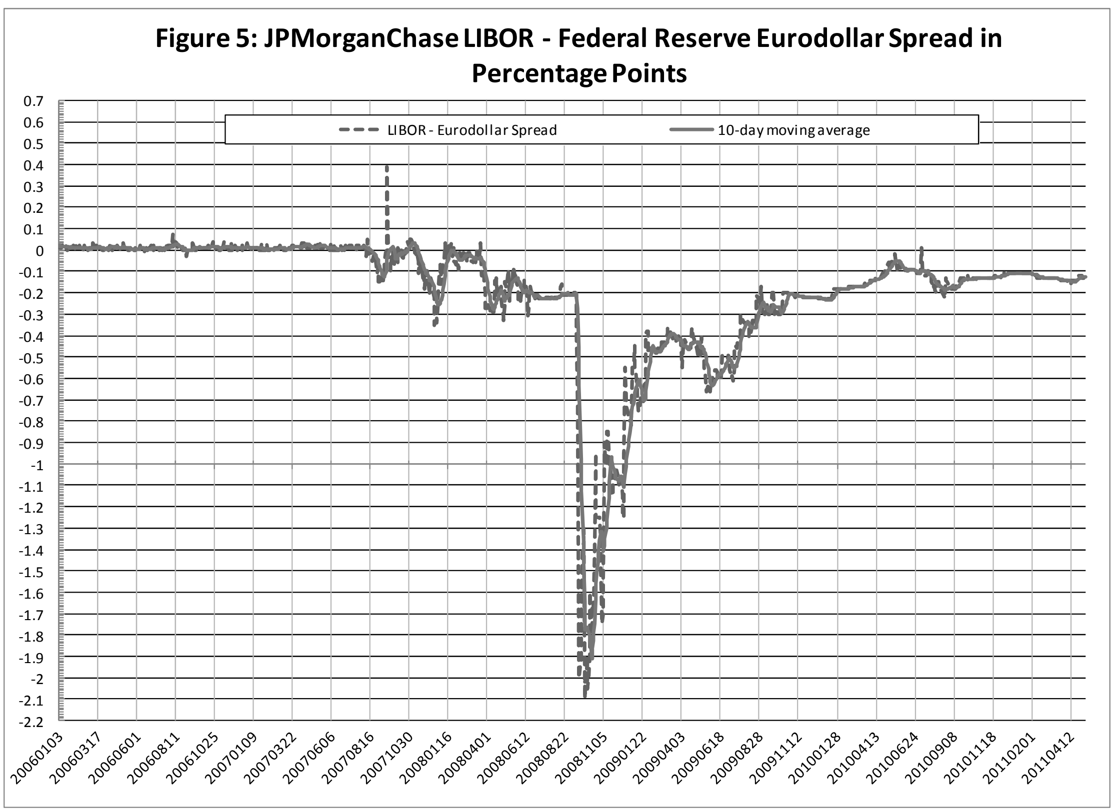
Figure 5: JPMorganChase LIBOR - Federal Reserve Eurodollar Spread in Percentage Points
LIBOR - Eurodollar Spread
10-day moving average
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0
-0.1
-0.2
-0.3
-0.4
-0.5
-0.6
-0.7
-0.8
-0.9
-1
-1.1
-1.2
-1.3
-1.4
-1.5
-1.6
-1.7
-1.8
-1.9
-2
-2.1
-2.2
20060103
20060317
20060601
20060811
20061025
20070109
20070322
20070606
20070816
20071030
20080116
20080401
20080612
20080822
20081105
20090122
20090403
20090618
20090828
20091112
20100128
20100413
20100624
20100908
20101118
20110201
20110412

Figure 6: Barclays LIBOR - Federal Reserve Eurodollar Spread in Percentage Points

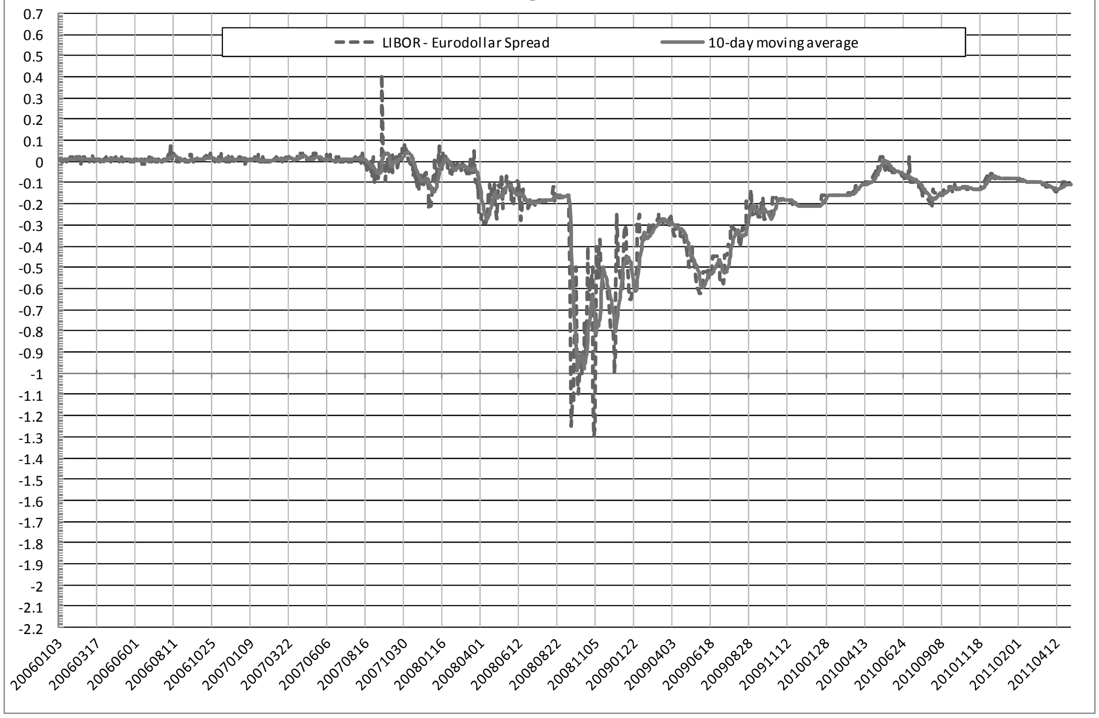

Figure 7: Deutsche Bank LIBOR - Federal Reserve Eurodollar Spread in Percentage Points

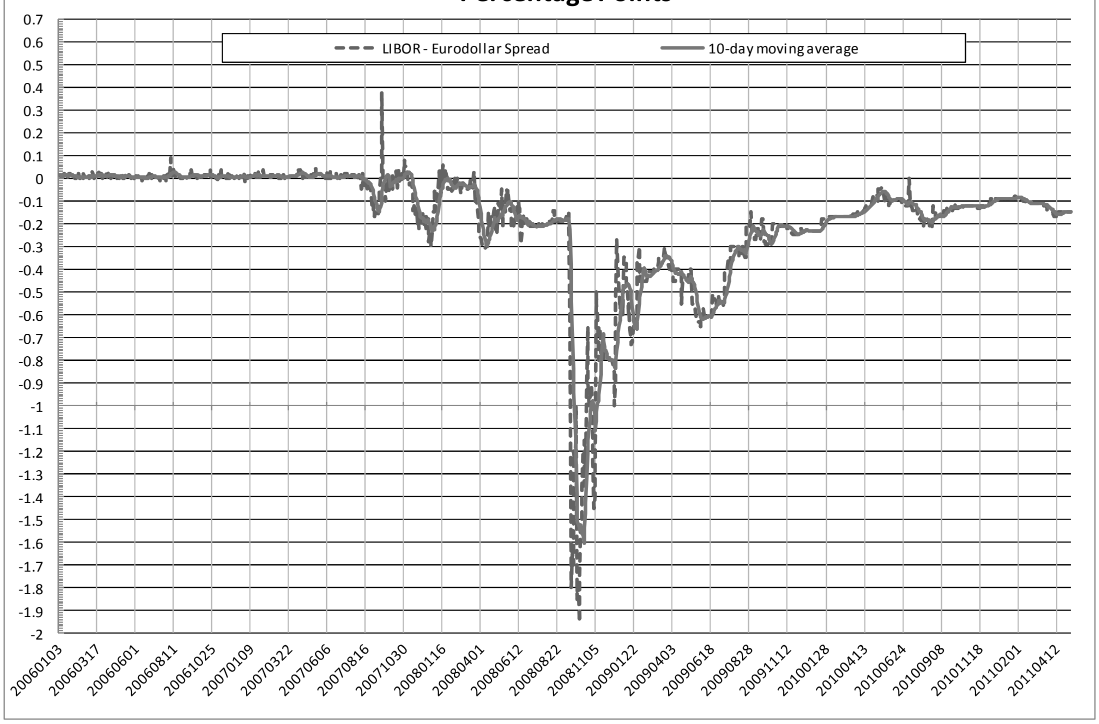

Figure 8: Lloyds LIBOR - Federal Reserve Eurodollar Spread in Percentage Points

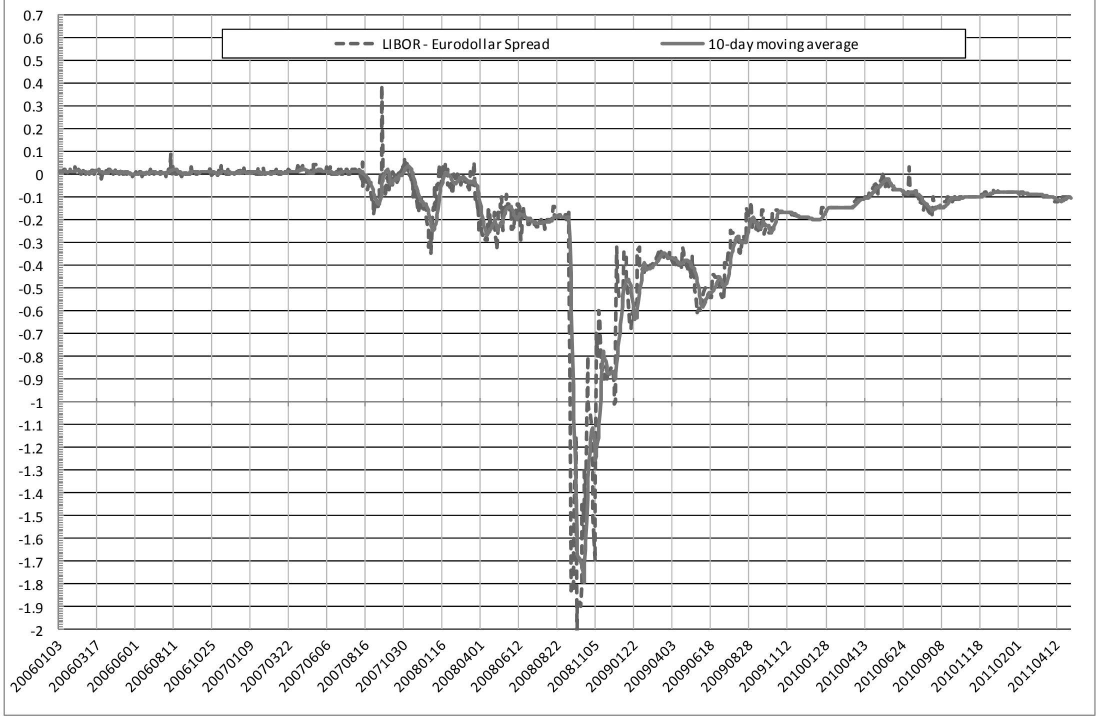

Figure 9: WestLB LIBOR - Federal Reserve Eurodollar Spread in Percentage Points

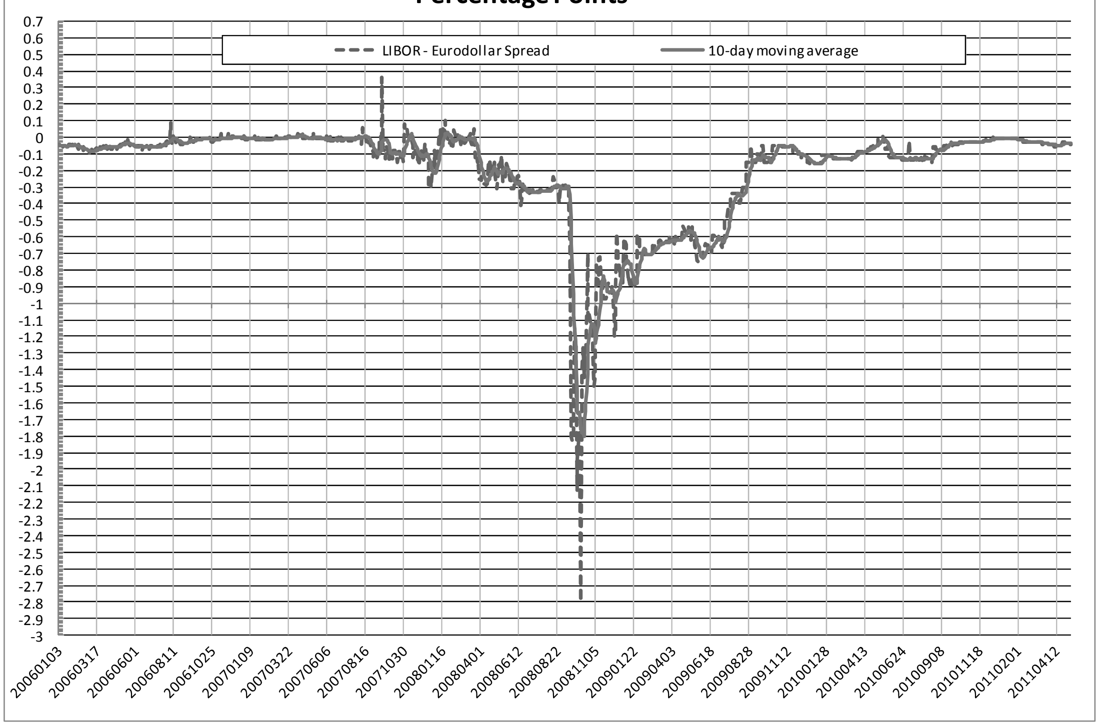

Figure 10: RBS LIBOR - Federal Reserve Eurodollar Spread in Percentage Points

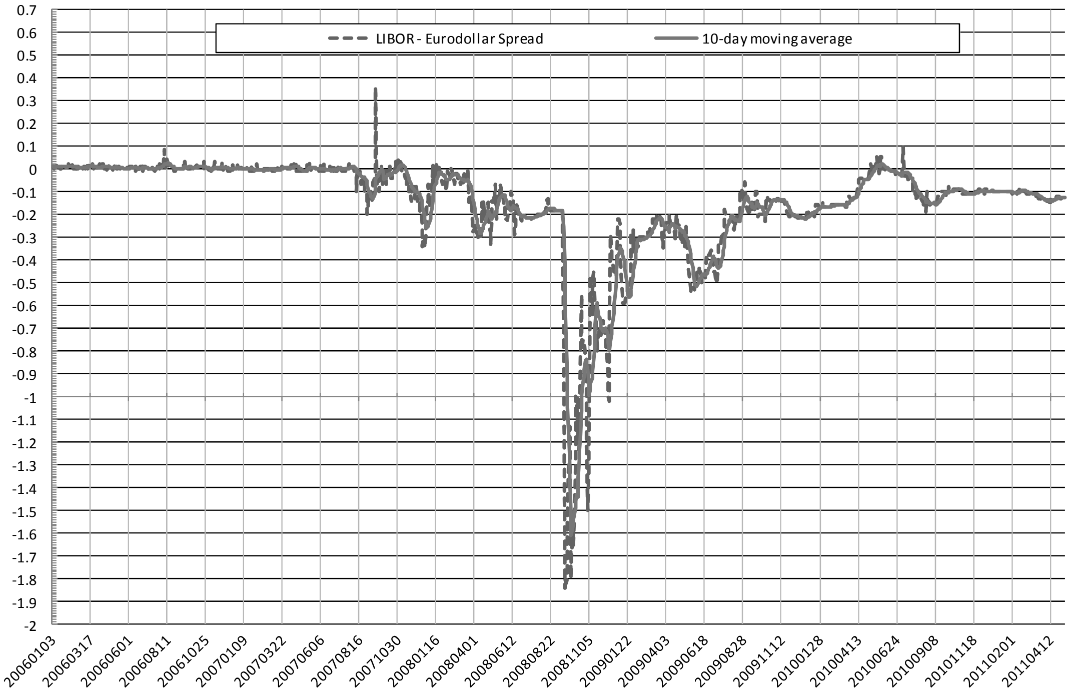

Figure 11: Rabo Bank LIBOR - Federal Reserve Eurodollar Spread in Percentage Points

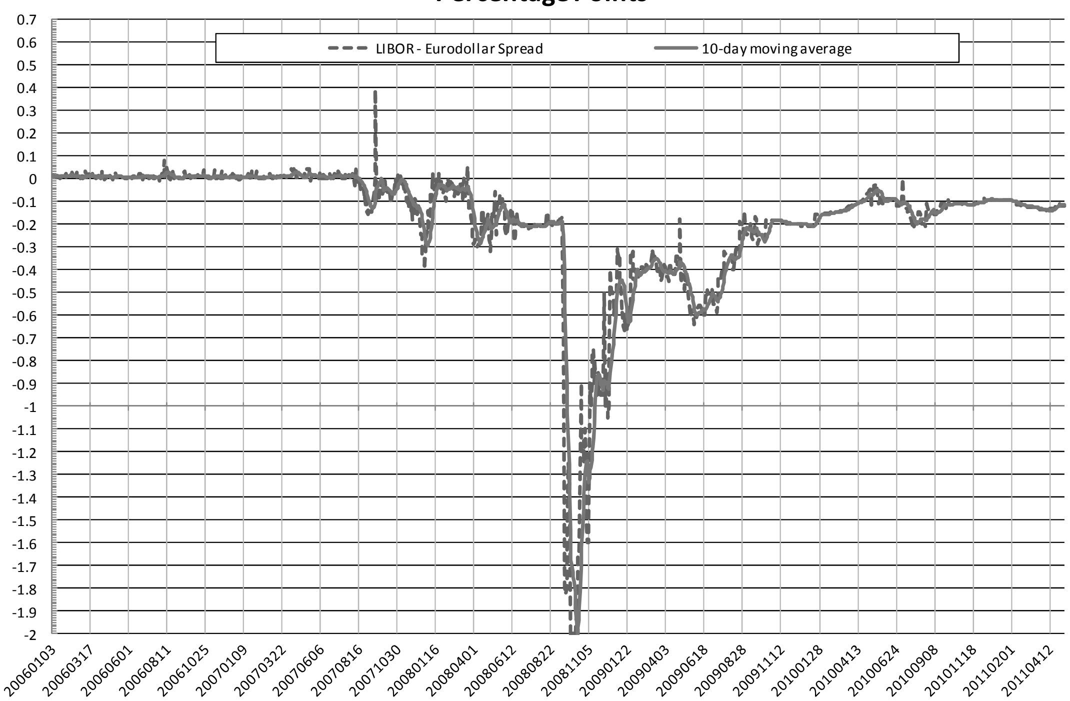

Figure 12: Bank of Tokyo LIBOR - Federal Reserve Eurodollar Spread in Percentage Points

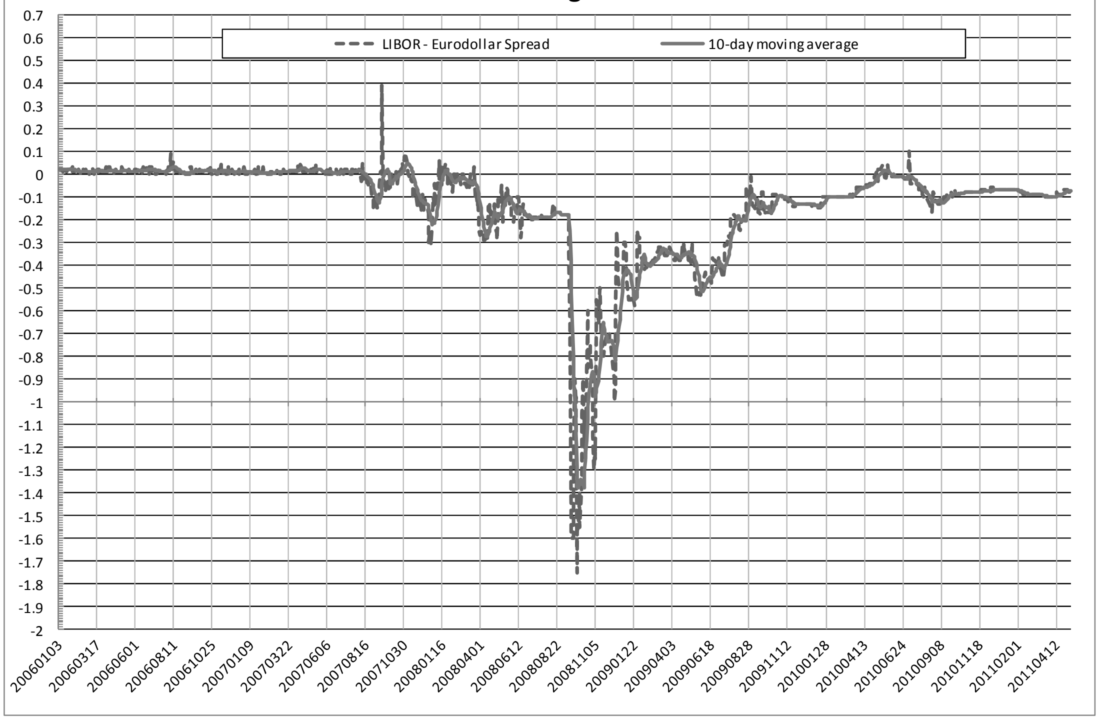

Figure 13: Citi LIBOR - Federal Reserve Eurodollar Spread in Percentage Points

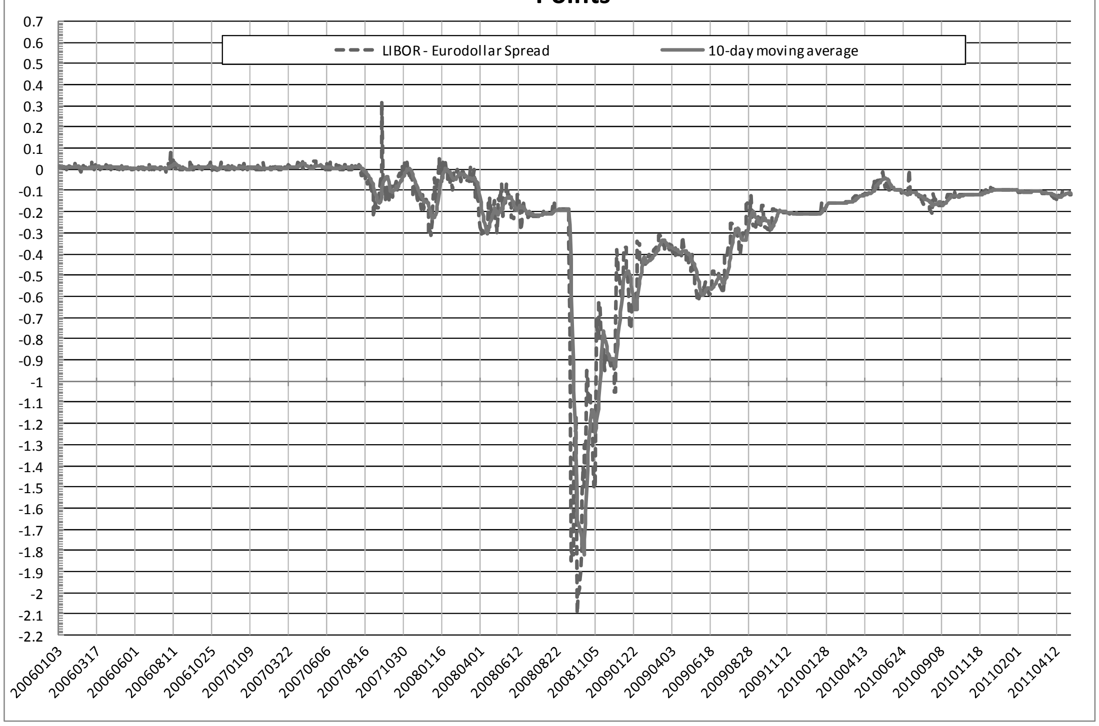

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Figure 14: CS LIBOR - Federal Reserve Eurodollar Spread in Percentage Points

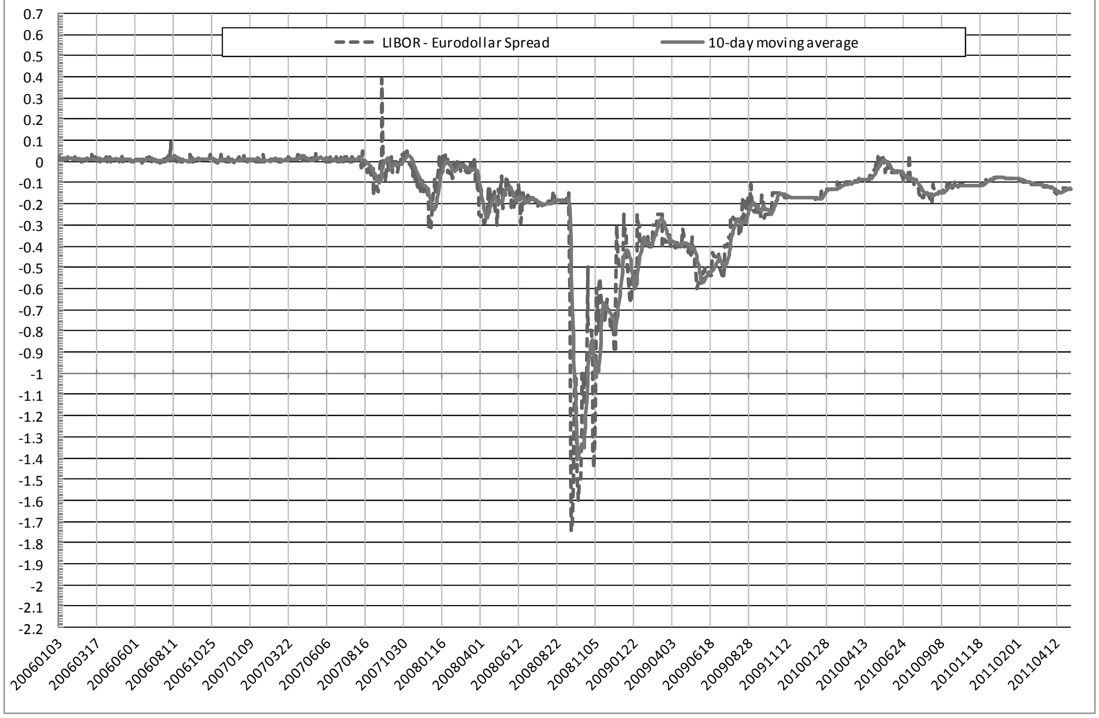
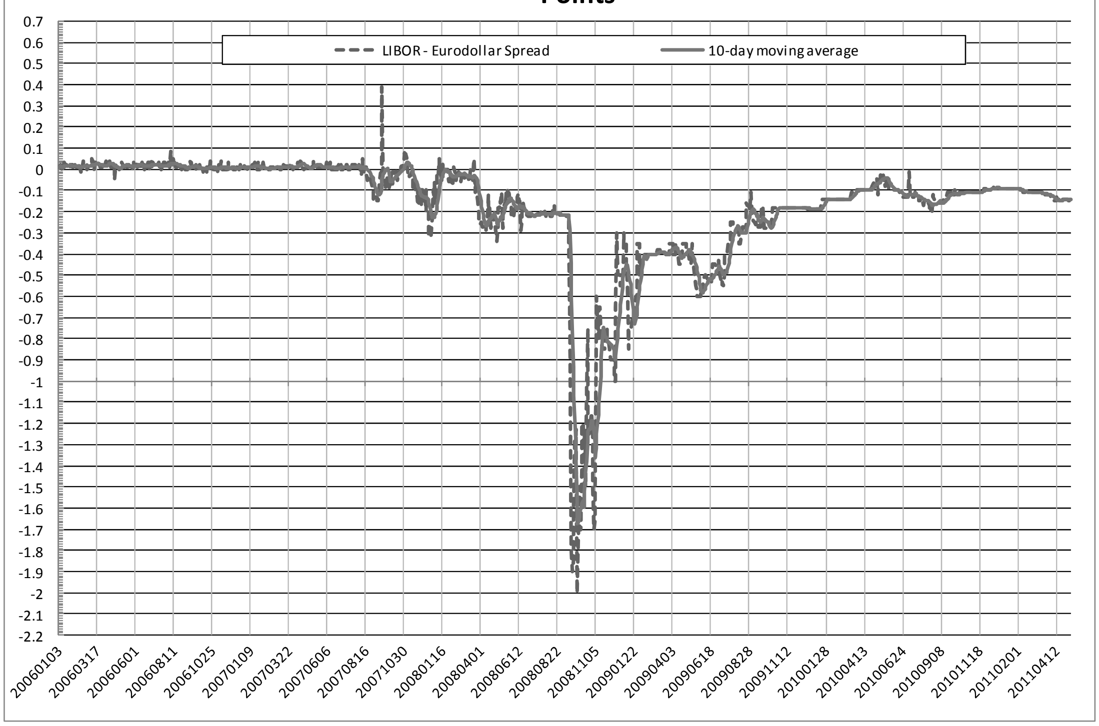


Figure 15: BoA LIBOR - Federal Reserve Eurodollar Spread in Percentage Points



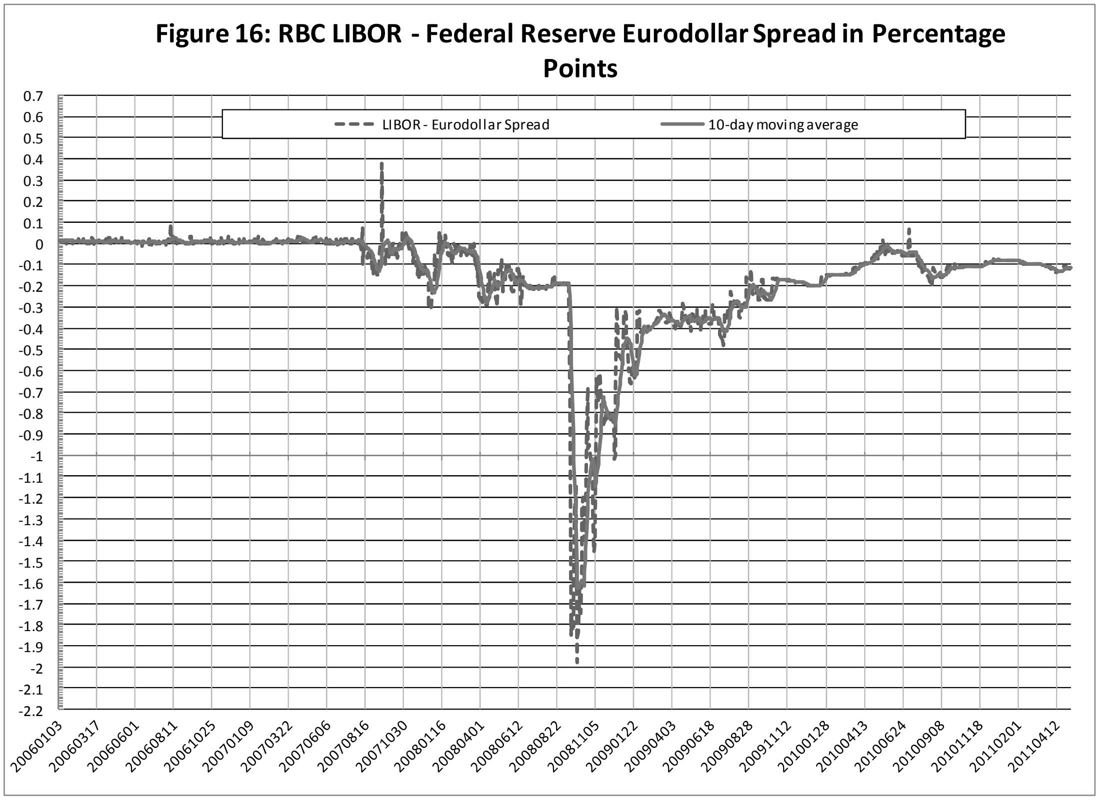


Figure 16: RBC LIBOR - Federal Reserve Eurodollar Spread in Percentage Points
LIBOR - Eurodollar Spread
10-day moving average
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0
-0.1
-0.2
-0.3
-0.4
-0.5
-0.6
-0.7
-0.8
-0.9
-1
-1.1
-1.2
-1.3
-1.4
-1.5
-1.6
-1.7
-1.8
-1.9
-2
-2.1
-2.2
20060103
20060317
20060601
20060811
20061025
20070109
20070322
20070606
20070816
20071030
20080116
20080401
20080612
20080822
20081105
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20101118
20110201
20110412

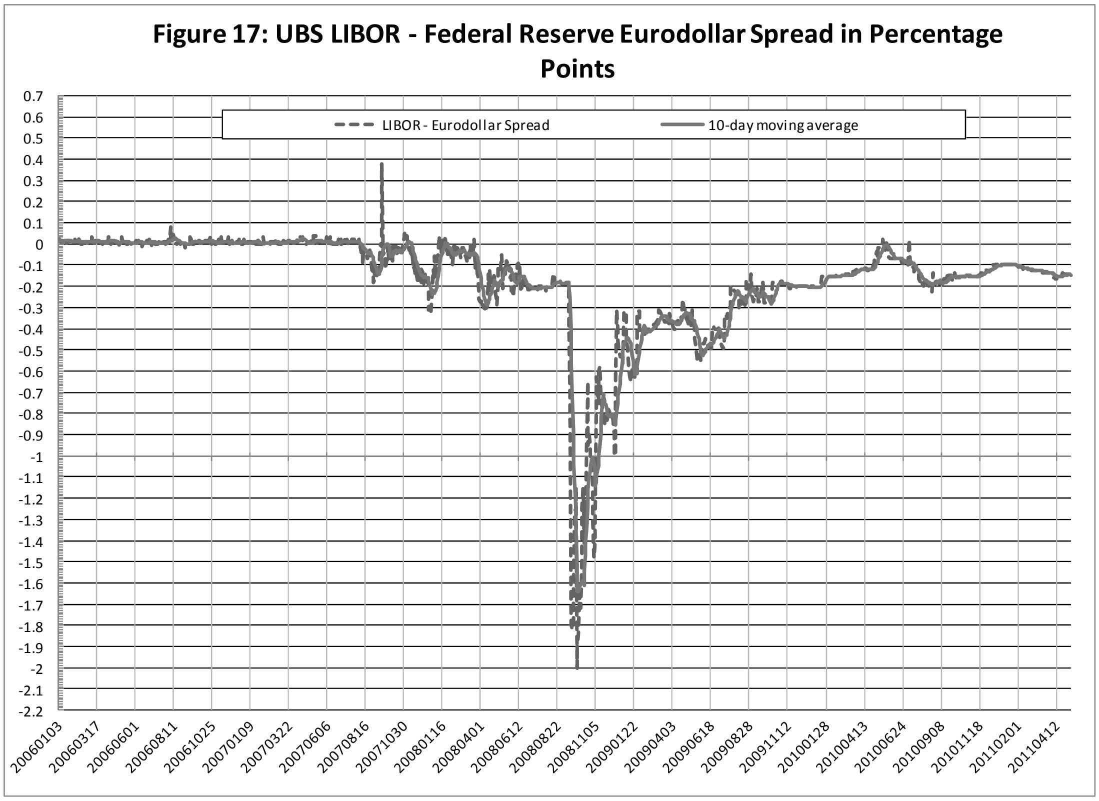
Figure 17: UBS LIBOR - Federal Reserve Eurodollar Spread in Percentage Points
LIBOR - Eurodollar Spread
10-day moving average
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0
-0.1
-0.2
-0.3
-0.4
-0.5
-0.6
-0.7
-0.8
-0.9
-1
-1.1
-1.2
-1.3
-1.4
-1.5
-1.6
-1.7
-1.8
-1.9
-2
-2.1
-2.2
20060103
20060317
20060601
20060811
20061025
20070109
20070322
20070606
20070816
20071030
20080116
20080401
20080612
20080822
20081105
20090122
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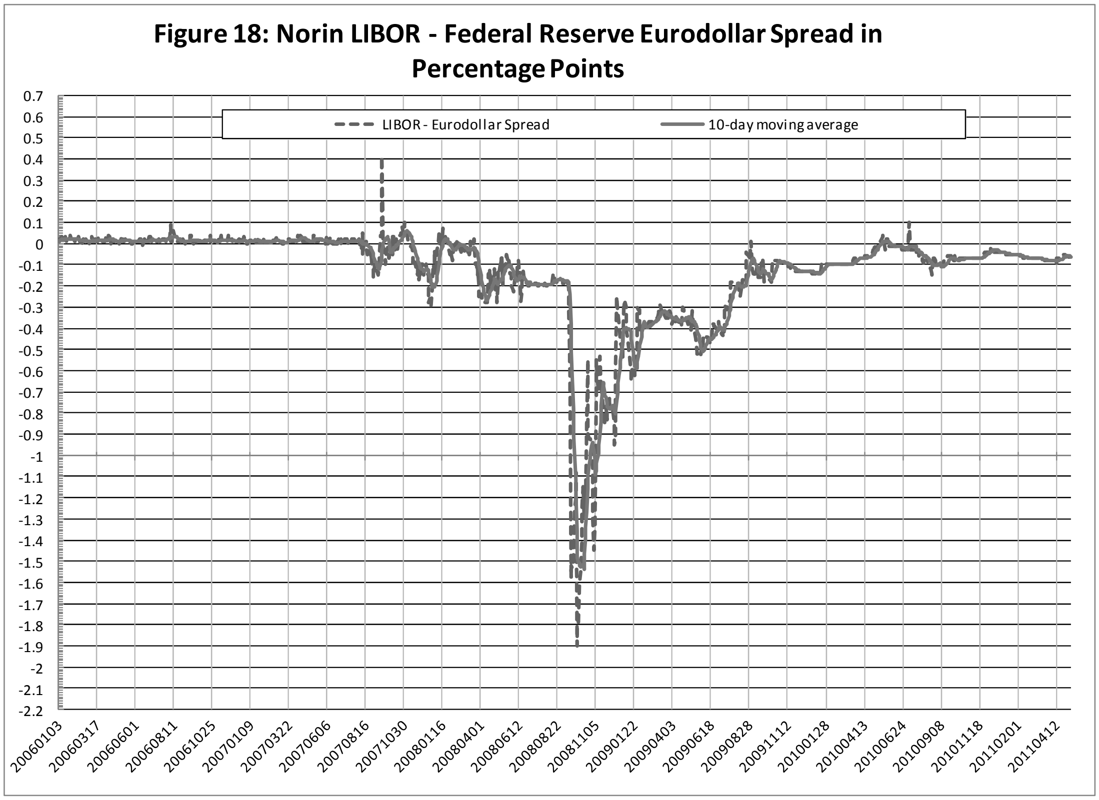
Figure 18: Norin LIBOR - Federal Reserve Eurodollar Spread in Percentage Points
LIBOR - Eurodollar Spread
10-day moving average
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0
-0.1
-0.2
-0.3
-0.4
-0.5
-0.6
-0.7
-0.8
-0.9
-1
-1.1
-1.2
-1.3
-1.4
-1.5
-1.6
-1.7
-1.8
-1.9
-2
-2.1
-2.2
20060103
20060317
20060601
20060811
20061025
20070109
20070322
20070606
20070816
20071030
20080116
20080401
20080612
20080822
20081105
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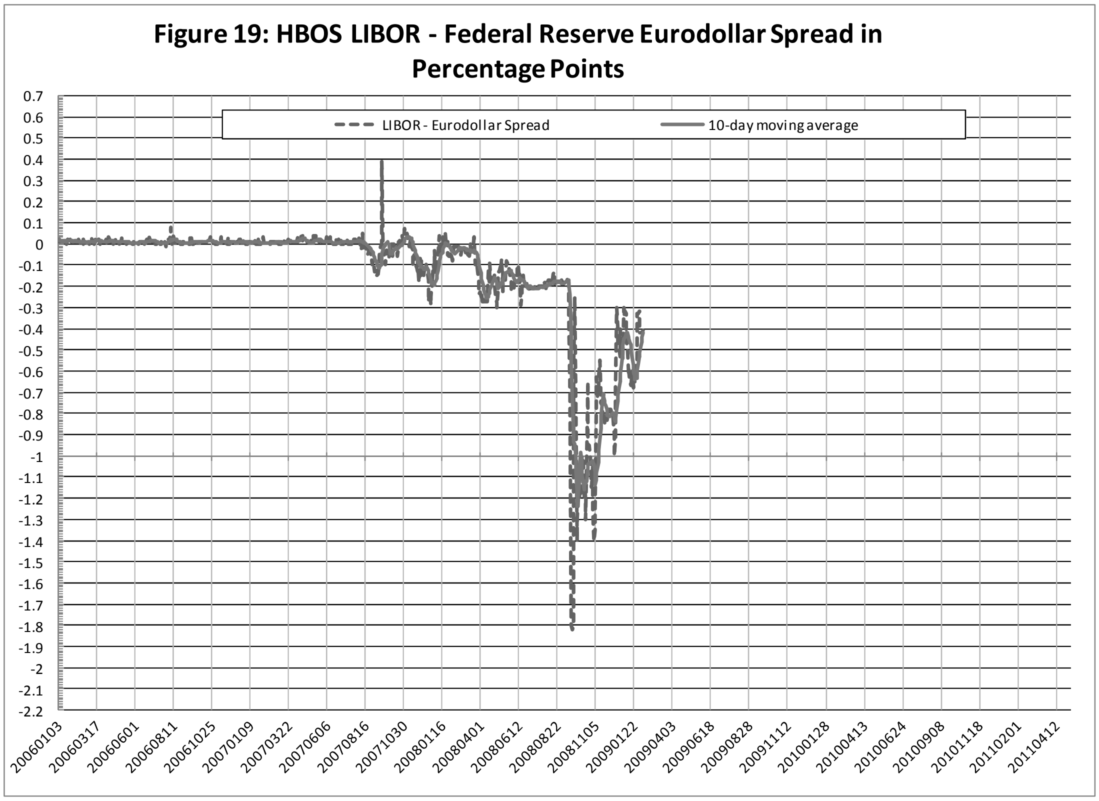
Figure 19: HBOS LIBOR - Federal Reserve Eurodollar Spread in Percentage Points
LIBOR - Eurodollar Spread
10-day moving average
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0
-0.1
-0.2
-0.3
-0.4
-0.5
-0.6
-0.7
-0.8
-0.9
-1
-1.1
-1.2
-1.3
-1.4
-1.5
-1.6
-1.7
-1.8
-1.9
-2
-2.1
-2.2
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72. As the following chart demonstrates, the average Spread for each of the individual Defendants was uniformly negative throughout the entire Relevant Period, strongly supporting that each of these banks was suppressing its LIBOR quotes, and colluding to suppress reported LIBOR rates.

BANK NAME	**Average Spread between August 8, 2007 through May 17, 2010**
1. Bank of Tokyo-Mitsb.	-25 basis points
2. Bank of America	-30 basis points
3. Barclays	-25 basis points
4. Citi	-32 basis points
5. CSFB	-27 basis points
6. Deutsche Bank	-31 basis points
7. HBOS	-29 basis points
8. HSBC	-32 basis points
9. JP Morgan Chase	-35 basis points
10. Lloyds	-30 basis points
11. Norin Bank	-25 basis points
12. Rabo Bank	-32 basis points
13. Royal Bank of Canada	-28 basis points
14. Royal Bank of Scotland	-26 basis points
15. UBS	-29 basis points
16. West	-35 basis points

73. Moreover, as set forth in the following chart, during the critical two week period following the bankruptcy of Lehman Brothers, each of Defendants dramatically increased its collusive suppression of LIBOR.

BANK NAME	**Average Spread between September 16, 2008 and September 30, 2008**
1. Bank of Tokyo-Mitsb.	-120 basis points
2. Bank of America	-144 basis points
3. Barclays	-87 basis points
4. Citi	-142 basis points
5. CS	-122 basis points
6. Deutsche Bank	-129 basis points
7. HBOS	-110 basis points
8. HSBC	-141 basis points
9. JP Morgan Chase	-153 basis points
10. Lloyds	-146 basis points
11. Norin Bank	-126 basis points
12. Rabo Bank	-143 basis points
13. Royal Bank of Canada	-140 basis points
14. Royal Bank of Scotland	-140 basis points
15. UBS	-141 basis points
16. West	-138 basis points

74. Every Spread during the period from September 16, 2008 to September 30, 2008

is statistically significant at the extremely high 99% confidence level.

75. Plaintiffs' consulting expert finds the results reflected in these two tables to be powerful and statistically significant evidence of Defendants' collusive suppression of LIBOR during the Relevant Period.

76. As detailed above, analysis based on well accepted statistical methodologies strongly supports that suppression of LIBOR occurred during the Relevant Period, accomplished through the collusive conduct of Defendants. The sustained period during which the Federal Reserve Eurodollar Deposit – LIBOR Spread fell and remained starkly negative, as seen in Figure 2 above, accounting as it does for Market Fundamentals, is not plausibly achievable absent collusion among Defendants. The intensified suppression from September 16, 2008 to September 30, 2008 (following the Lehman bankruptcy), in defiance of economic expectations, provides further powerful support for the suppression of LIBOR achieved through collusion by Defendants. Because no Defendant Bank – absent collusive conduct – could know what LIBOR quote another panel bank actually intended to submit prior to those numbers being made public after 11:00 in the morning, the fact that all Defendants submitted LIBOR quotes below the Federal Reserve Eurodollar Deposit Rate over the Relevant Period further strongly supports the participation of each Defendant Bank in the suppressive and collusive scheme.

C. Empirical Analyses By Academics and Other Commentators Further Indicate LIBOR Suppression Occurred.

77. In addition to the independent expert work detailed above, publicly available analyses by academics and other commentators likewise support the Schwab Funds' allegations. While those studies used various comparative benchmarks and did not employ uniform methodologies, they collectively indicate LIBOR was artificially suppressed during the Relevant Period.

1. **<u>The discrepancy between Defendants' reported LIBOR quotes and their CDS spreads indicates the banks misrepresented their borrowing costs to the BBA.</u>**

78. One economic indicator that Defendants suppressed USD-LIBOR during the Relevant Period is the variance between their LIBOR quotes and their contemporaneous cost of buying default insurance—i.e., a credit-default swap ("CDS")—on debt they issued during that period. A CDS—"the most common form of credit derivative, *i.e.*, [a] contract which transfers credit risk from a protection buyer to a credit protection seller"[21]—constitutes an agreement by which one party, the protection buyer, seeks financial protection in the event of a default on an underlying credit instrument (typically a bond or loan). Typically, a CDS buyer makes a series of payments (often referred to as the CDS "fee" or "spread") to the CDS seller in exchange for a payment if the underlying credit instrument experiences an adverse credit event.

79. The spread serves as a measure of the perceived risk of default by the entity issuing the underlying bond or receiving the loan—the greater the risk of default the underlying bond or loan bears, the greater the CDS spread. In the case of a CDS for which the underlying instrument consists of an interbank loan where a USD-LIBOR panel bank is the borrower, the greater the perceived risk the panel bank will default on the loan, the higher the applicable CDS spread, as this higher spread represents the cost of insuring against the increased risk of a default on the underlying loan.

80. As one commentator has observed, "The cost of bank default insurance has generally been positively correlated with LIBOR. That is, in times when banks were thought to be healthy, both the cost of bank insurance and LIBOR decreased or remained low, but when

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[21] *Eternity Global Master Fund Ltd. v. Morgan Guar. Trust Co. of N.Y.*, 375 F.3d 168, 171-72 (2d Cir. 2004) (alteration in original) (citation and internal quotation marks omitted).

banks were thought to be in poor condition, both increased."[22] During the Relevant Period, however, those historically-correlated indicia of banks' borrowing costs diverged significantly.

81. That discrepancy was detailed in a May 29, 2008 *Wall Street Journal* article reporting the results of a study it had commissioned. The *Journal*'s analysis indicated numerous banks caused LIBOR, "which is supposed to reflect the average rate at which banks lend to each other," to "act as if the banking system was doing better than it was at critical junctures in the financial crisis."[23] The *Journal* found that beginning in January 2008, "the two measures began to diverge, with reported LIBOR rates failing to reflect rising default-insurance costs."

82. The *Journal* observed that the widest gaps existed with respect to the LIBOR quotes of Defendants Citibank, WestLB, HBOS, JPMorgan Chase, and UBS. According to the *Journal*'s analysis, Citibank's LIBOR rates differed the most from what the CDS market suggested the bank's borrowing cost was. On average, the rates at which Citibank reported it could borrow dollars for three months (i.e., its three-month LIBOR rates) were about 87 basis points *lower* than the rates calculated using CDS data. WestLB, HBOS, JPMorgan Chase, and UBS likewise exhibited significant LIBOR-CDS discrepancies—of 70, 57, 43, and 42 basis points, respectively—while Defendants Credit Suisse, Deutsche Bank, Barclays, HSBC, Lloyds, and RBS each exhibited discrepancies of about 30 basis points. The study's authors concluded "one possible explanation for this gap is that banks understated their borrowing rates."

83. Citing another example of suspicious conduct, the *Journal* observed that on the afternoon of March 10, 2008, investors in the CDS market were betting that WestLB—hit

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[22] Justin Wong, "LIBOR Left in Limbo; A Call for More Reform," 13 *North Carolina Banking Institute* 365, 371 (2009) (footnotes omitted).

[23] *See* Carrick Mollenkamp and Mark Whitehouse, "Study Casts Doubt on Key Rate --- WSJ Analysis Suggests Banks May Have Reported Flawed Interest Data for Libor."

especially hard by the credit crisis—was nearly twice as likely to renege on its debts as Credit Suisse, which was perceived to be in better shape, yet the next morning the two banks submitted identical LIBOR quotes.

84. Additionally, having compared the banks' LIBOR quotes to their actual costs of borrowing in the commercial-paper market, the *Journal* reported, for example, that in mid-April 2008, UBS paid 2.85% to borrow dollars for three months, but on April 16, 2008, the bank quoted a borrowing cost of 2.73% to the BBA.

85. The *Journal* further noted an uncanny equivalence between the LIBOR panel banks' quotes: the three-month borrowing rates the banks reported remained within a range of only 0.06 of a percentage point, even though at the time their CDS insurance costs (premiums) varied far more widely, reflecting the market's differing views as to the banks' creditworthiness. According to Stanford University professor Darrell Duffie, with whom the authors of the *Journal* article consulted, the unity of the banks' LIBOR quotes was "far too similar to be believed."

86. David Juran, a statistics professor at Columbia University who reviewed the *Journal*'s methodology, similarly concluded that the *Journal's* calculations demonstrate "very convincingly" that reported LIBOR rates are lower, to a statistically significant degree, than what the market thinks they should be.

87. Calculating an alternate borrowing rate incorporating CDS spreads, the *Journal* estimated that underreporting of LIBOR had a $45 billion effect on the market, representing the amount borrowers (the banks) did not pay to lenders (investors in debt instruments issued by the banks) that they would otherwise have had to pay.

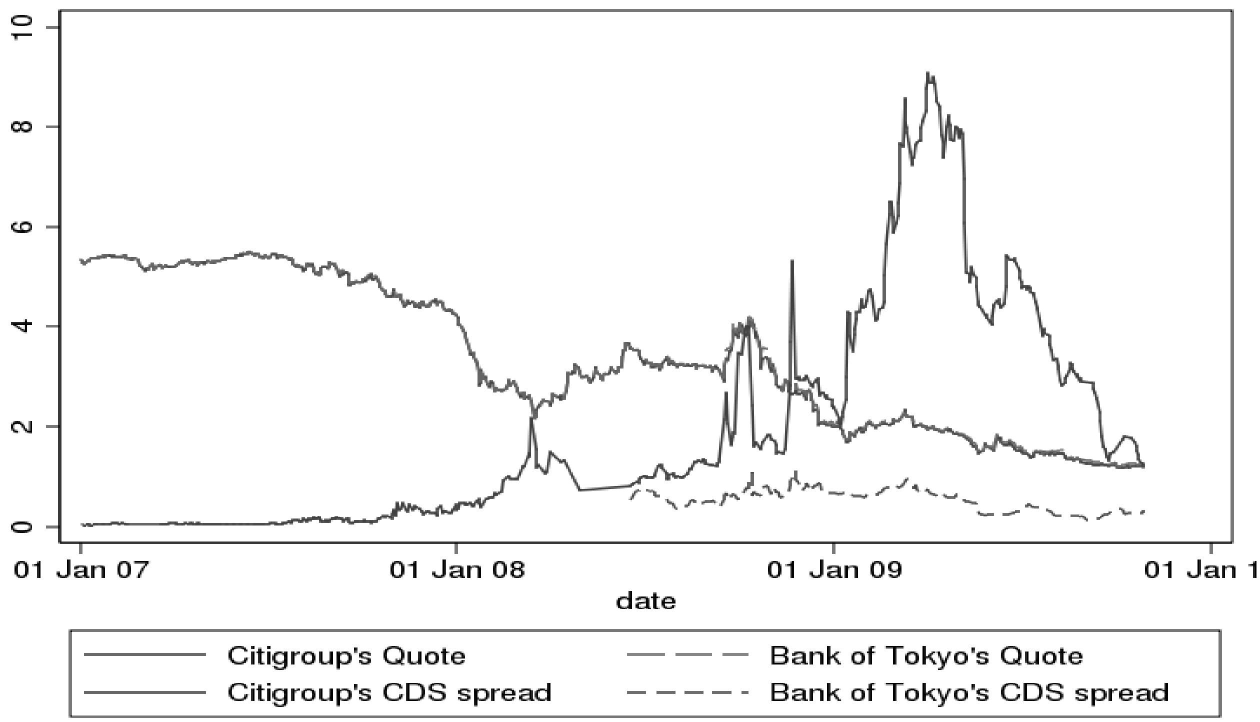
88. According to the *Journal*, three independent academics, including Professor Duffie, reviewed its methodology and findings, at the paper's request. All three deemed the

Journal's approach "reasonable."

89. Further economic analysis supports the correlation seen in the *Journal*'s report. A study by Connan Snider and Thomas Youle—of the economics departments at UCLA and the University of Minnesota, respectively—released in April 2010 concluded LIBOR did not accurately reflect average bank borrowing costs, its "ostensible target."[24] Noting that "[i]n a competitive interbank lending market, banks' borrowing costs should be significantly related to their perceived credit risk," Snider and Youle posited that if LIBOR quotes "express true, competitively determined borrowing costs," they should "be related to measures of credit risks, such as the cost of default insurance." According to Snider and Youle's analysis, however, quotes provided by USD-LIBOR panel banks in fact deviated from their costs of borrowing as reflected in CDS spreads.

90. Comparing, for example, the 12-month USD-LIBOR quotes from Citigroup and Bank of Tokyo together with the banks' respective one-year senior CDS spreads, Snider and Youle observed (as illustrated in the graph below) "that while Citigroup has a substantially higher CDS spread than [Bank of Tokyo], it submits a slightly lower Libor quote." Accordingly, the authors explain, while the CDS spreads "suggest that the market perceives Citigroup as riskier than [Bank of Tokyo], as it is more expensive to insure against the event of Citigroup's default," the banks' LIBOR quotes "tell the opposite story."

[24] Connan Snider and Thomas Youle, "Does the LIBOR reflect banks' borrowing costs?", April 2, 2010.



91. Snider and Youle further noted the level of Citigroup's CDS spreads relative to its LIBOR quotes was "puzzling." The authors explained, "Given that purchasing credit protection for a loan makes the loan risk free, one would expect [the] difference between the loan rate and the CDS spread to roughly equal the risk free rate. This corresponds to the idea that a loan's interest rate contains a credit premium, here measured by the CDS spread." But the authors observed that Citigroup's quote was often "significantly below its CDS spread," implying "there were interbank lenders willing to lend to Citigroup at rates which, after purchasing credit protection, would earn them *a guaranteed 5 percent loss*." (Emphasis added). That discrepancy contravenes basic rules of economics and finance, thus indicating Citibank underreported its borrowing costs to the BBA.

2. <u>Cross-currency discrepancies in Defendants' LIBOR quotes indicate they suppressed USD-LIBOR.</u>

92. Defendants' LIBOR quotes also displayed inexplicable "cross-currency rank

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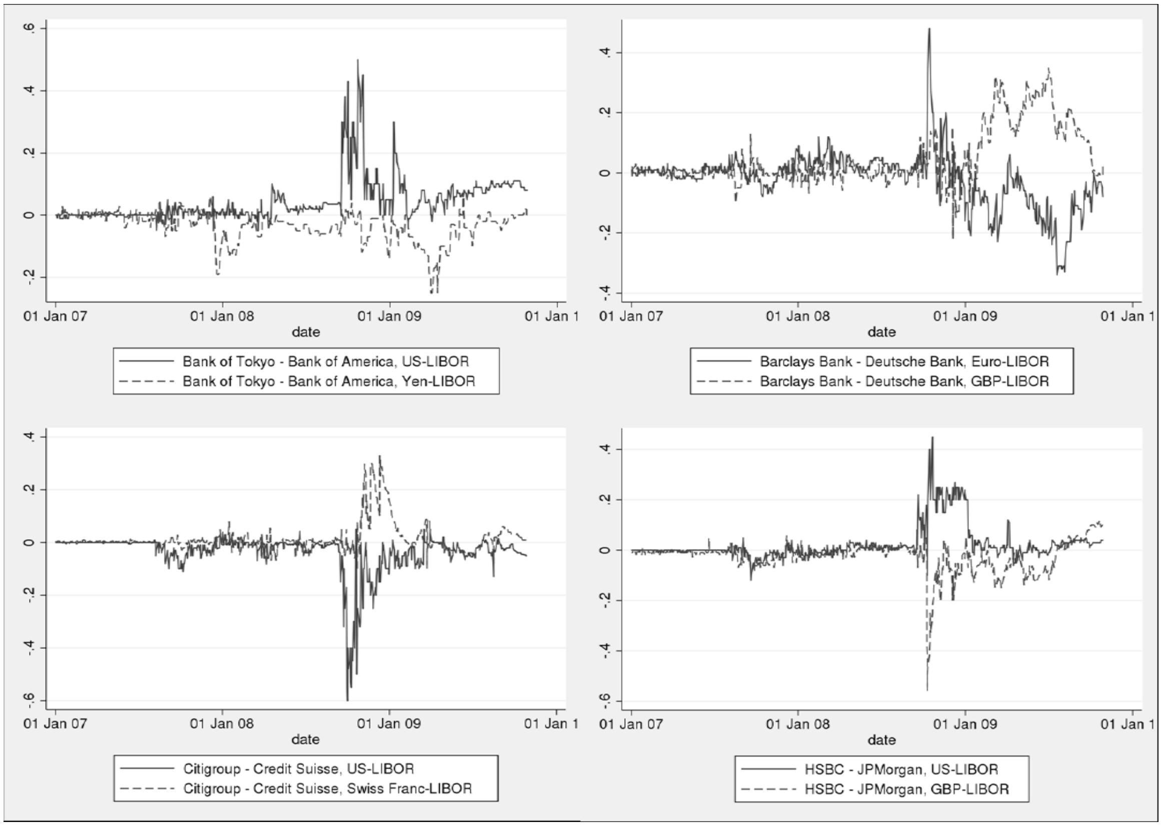
reversals." That is, as detailed in Snider and Youle's paper referenced above, at least some Defendants reported lower rates on USD-LIBOR than did other panel members but, for other currencies, provided higher rates than did those same fellow banks. Both BAC and BTMU, for instance, quoted rates for USD-LIBOR and Yen-LIBOR during the period under study, yet BAC quoted a lower rate than BTMU for USD-LIBOR and a *higher* rate than BTMU for Yen-LIBOR. Other Defendants included in Snider and Youle's analysis—Barclays, Citigroup, and JPMorgan Chase—displayed similar anomalies across currencies, as the graphs below illustrate. Citigroup, for example, often reported rates at the top of the Yen-LIBOR scale while simultaneously quoting rates at the bottom of the USD-LIBOR scale. Because, Snider and Youle explain, "the same bank is participating in each currency," the credit risk "is the same for loans in either currency"; thus these "rank reversals" demonstrate that differences in the banks' LIBOR quotes "are not primarily due to differences in credit risk, something we would expect of their true borrowing costs."



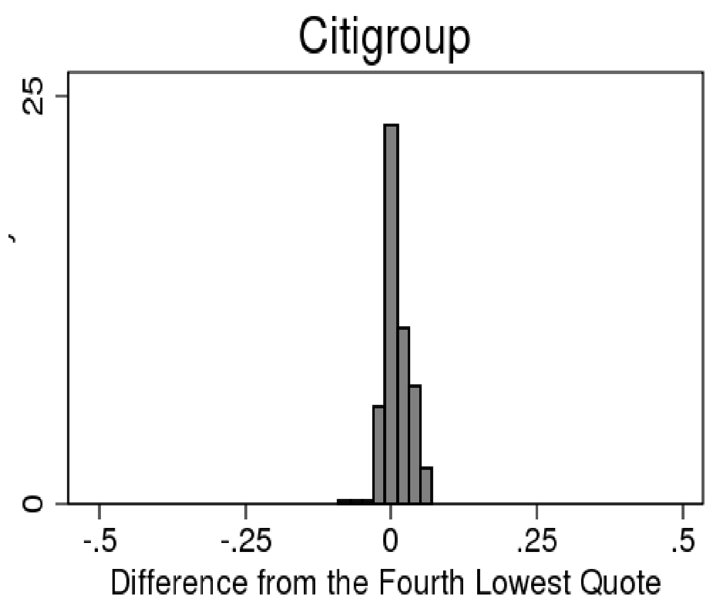
3. <u>The frequency with which at least certain Defendants' LIBOR quotes "bunched" around the fourth-lowest quote of the day suggests manipulation.</u>

93. During the Relevant Period, the rates reported by certain Defendants—in particular, Citibank, BAC, and JPMorgan Chase—also demonstrated suspicious "bunching" around the fourth lowest quote submitted by the 16 banks to the BBA. Indeed, Citibank's and BAC's quotes often tended to be identical to the fourth-lowest quote for the day. Because the LIBOR calculation involved excluding the lowest (and highest) four reported rates every day, bunching around the fourth-lowest rate suggests Defendants collectively depressed LIBOR by reporting the lowest possible rates that would not be excluded from the calculation of LIBOR on a given day.

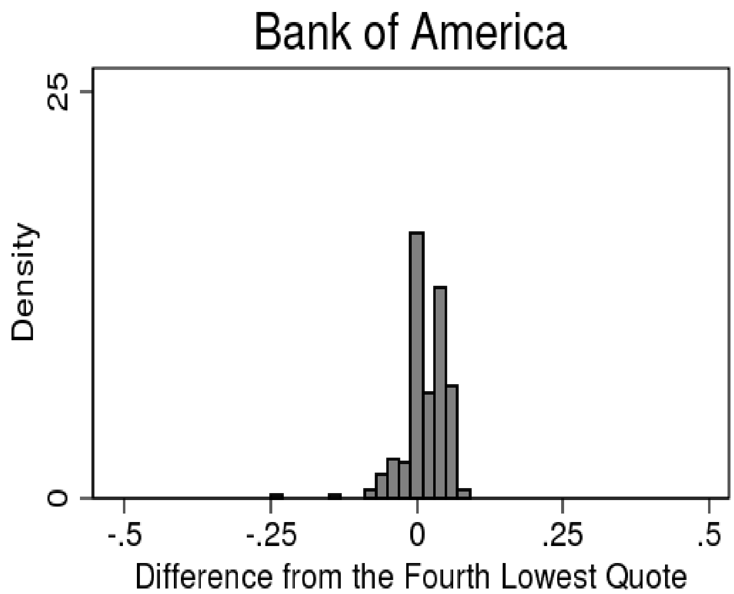
94. Bunching among Defendants' respective LIBOR quotes indicates the banks intended to report the same or similar rates, notwithstanding the banks' differing financial

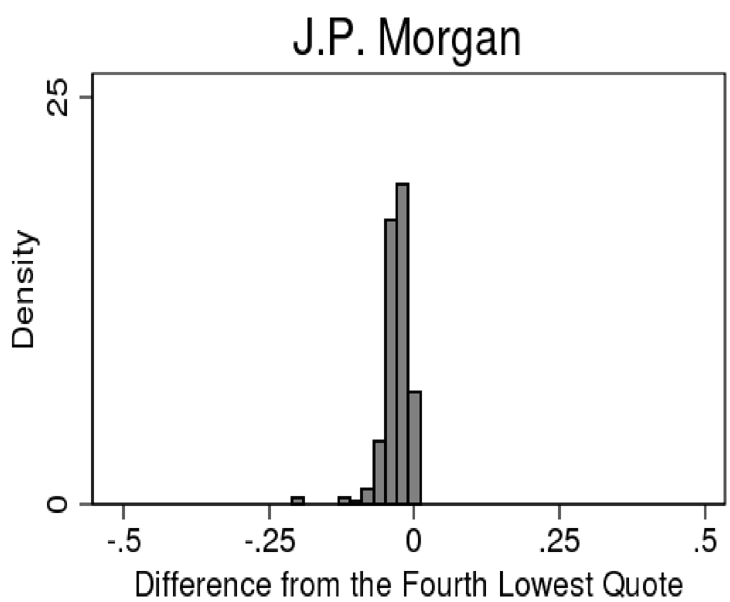
conditions, which, as detailed below (¶¶ 109-19), reasonably should have resulted in differing LIBOR quotes. Those discrepancies suggest Defendants colluded to suppress LIBOR.

95. The following charts show the frequency with which the USD-LIBOR quotes submitted by Defendants Citigroup, BAC, and JPMorgan Chase fell within a given percentage rate from the fourth-lowest quote. A negative difference means the reporting bank was below the fourth-lowest quote, and therefore its rate was not included in the daily LIBOR calculation, while zero difference means that the bank reported the fourth-lowest quote on a given day (either by itself or tied with other reporting banks).[25]



[25] In the event of a tie between two or more banks, one of the banks' quotes, selected at random, was discarded.





96. According to Snider and Youle, the fact that observed bunching occurred around the pivotal fourth-lowest reported rate reflects the reporting banks' intention to ensure the lowest borrowing rates were included in the calculation of USD-LIBOR (which includes only the fifth-lowest through the twelfth-lowest quotes).

97. In other words, banks that bunched their quotes around the fourth-lowest

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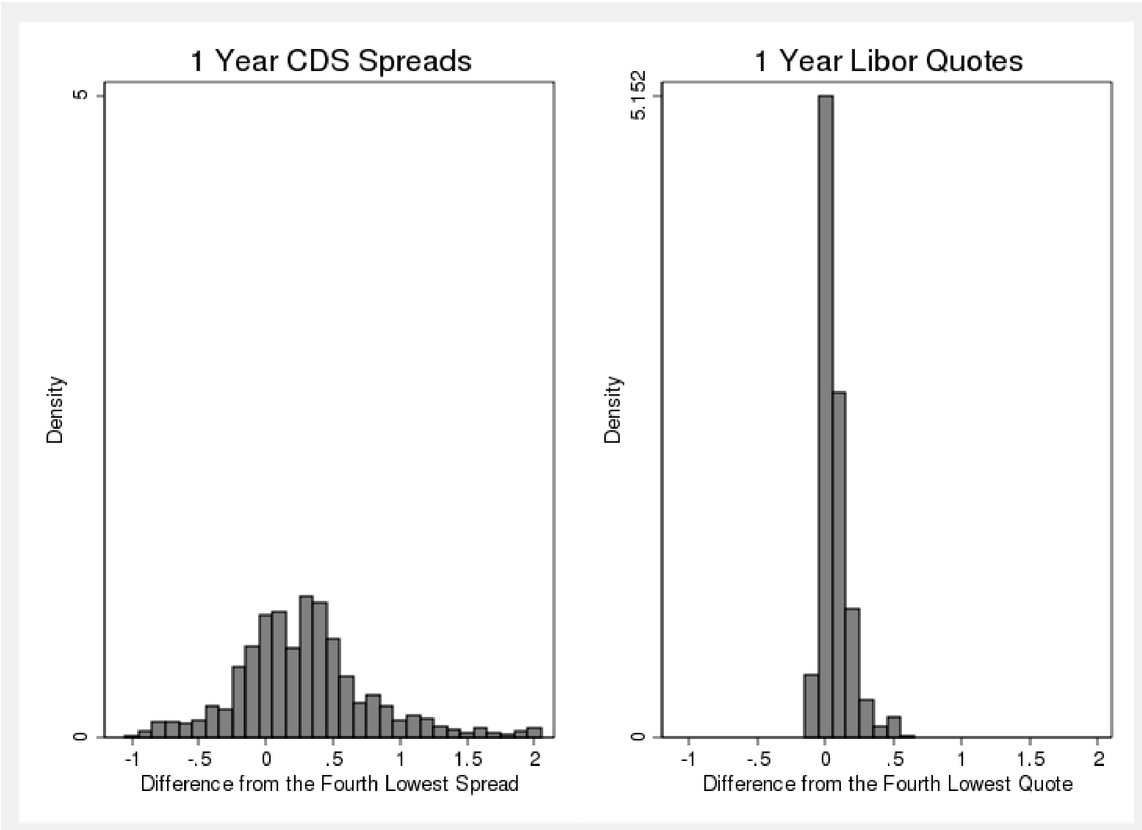
submission helped ensure the maximum downward manipulation of the resulting rate. Furthermore, that a panel bank reported one of the four lowest quotes (i.e., quotes excluded from the ultimate LIBOR calculation) does not mean the bank did not also participate in the collusion.

98. Further demonstrating the aberrant nature of the observed bunching around the fourth-lowest quote, Snider and Youle noted "the intraday distribution of *other* measures of bank borrowing costs do not exhibit this bunching pattern." (Emphasis added).

99. Additionally, Snider and Youle detailed a discrepancy between USD-LIBOR panel banks' LIBOR quotes and their CDS spreads, i.e., that "with the intra-day variation of both Libor quotes and CDS spreads increasing from their historical levels," the CDS spreads' intra-day variation "grew considerably larger than that of Libor quotes."[26]

100. Snider and Youle further observed that—as the graphs below, embodying a composite of all the banks, illustrate—during the Relevant Period Defendants' quotes tended to "bunch" around the fourth-lowest quote much more commonly than those banks' CDS spreads "bunched" around the fourth-lowest spread. The authors concluded, "If banks were truthfully quoting their costs, . . . we would expect these distributions to be similar."

[26] Snider and Youle, "Does the LIBOR reflect banks' borrowing costs?"



101. Given the method by which the BBA calculates LIBOR—discarding the highest and lowest reported rates and averaging the remainder—that strong concentration around the fourth-lowest rate is exactly what would occur if a number of banks sought in concert to depress LIBOR.

4. <u>That LIBOR diverged from its historical relationship with the Federal Reserve auction rate indicates suppression occurred.</u>

102. A comparison between LIBOR and the Federal Reserve auction rate further suggests Defendants artificially suppressed LIBOR during the Relevant Period. An April 16, 2008 *Wall Street Journal* article, for example, noted the Federal Reserve had recently auctioned off $50 billion in one-month loans to banks for an average annualized interest rate of 2.82%—10 basis points higher than the comparable USD-LIBOR rate. That differential would make no economic sense if the reported LIBOR rate was accurate, the *Journal* observed: "Because banks

put up securities as collateral for the Fed loans, they should get them for a lower rate than Libor, which is riskier because it involves no collateral."

103. A subsequent *Journal* article raised further concerns about LIBOR's accuracy based on the comparison of one-month LIBOR with the rate for the 28-day Federal Reserve auction.[27] According to the *Journal*, because the Federal Reserve requires collateral:

> banks should be able to pay a lower interest rate [to the Fed] than they do when they borrow from each other [e.g., as ostensibly measured by LIBOR] because those loans are unsecured. It is the same reason why rates for a mortgage, which is secured by a house, are lower than those for credit cards, where the borrower doesn't put up any collateral. In other words, the rate for the Fed auction should be lower than Libor.

To the contrary, though, two days before the *Journal* article (September 22, 2008), the rate for the 28-day Fed facility was 3.75%—much higher than one-month USD-LIBOR, which was 3.18% that day[28] and 3.21% the next day.

5. <u>**LIBOR's divergence from its historical correlation to overnight index swaps also suggests it was artificially suppressed during the Relevant Period.**</u>

104. Yet another measure of LIBOR's aberrant behavior with respect to other measures of banks' borrowing costs during the Relevant Period is its observed deviation from the overnight-index swap ("OIS") rate. In his academic article analyzing LIBOR data for the second half of 2007 and 2008, Justin Wong observed that between 2001 and July 2007, when the global credit crisis began, the spread between LIBOR and the OIS rate "averaged eleven basis points."[29] By July 2008, on the other hand, that gap approached 100 basis points—a figure significantly

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[27] Carrick Mollenkamp, "Libor's Accuracy Becomes Issue Again," *The Wall Street Journal*, September 24, 2008.

[28] The *Journal* initially reported the one-month USD-LIBOR rate for that day as 3.19% but later noted the correct figure.

[29] Justin Wong, "LIBOR Left in Limbo; A Call for More Reform."

higher than the spread from a year earlier—and by October 2008, "it peaked at 366 basis points." While the spread "receded somewhat in November 2008 to 209 basis points," that was still "far above the pre-crisis level." Wong's analysis provides further support for the Schwab Funds' allegations that Defendants suppressed LIBOR.

6. Additional data suggest LIBOR may have been manipulated as early as August 2006.

105. As the empirical evidence in support of LIBOR manipulation continues to develop, at least some of the data point to possible manipulation as early as August 2006. In a recent paper, Rosa Abrantes-Metz (of NYU Stern School of Business's Global Economics Group) and Albert Metz (of Moody's Investors Service) compared one-month LIBOR against the Fed Funds effective rate and the one-month Treasury Bill ("T-Bill") rate.[30] Studying the period spanning early August 2006 through early August 2007, the authors observed the level of one-month LIBOR was "virtually constant," while the Fed Funds effective rate and the one-month T-Bill rate did "not present such striking stability." Spurred by that "highly anomalous" discrepancy, Abrantes-Metz and Metz examined the LIBOR panel members' individual quotes, which showed that during the studied period, the middle eight quotes used to set LIBOR each day were "essentially identical day in and day out"—another "highly anomalous" finding.

106. The authors concluded that "explicit collusion" presented "the most likely explanation" for this anomalous behavior. They explained that because LIBOR quotes are submitted sealed, "the likelihood of banks moving simultaneously to the same value from one day to the next without explicit coordination is extremely low, particularly given that their idiosyncrasies would not imply completely identical quotes under a non-cooperative outcome."

[30] Rosa M. Abrantes-Metz and Albert D. Metz, "How Far Can Screens Go in Distinguishing Explicit from Tacit Collusion? New Evidence from the Libor Setting."

They further opined "it is difficult to attribute it to tacit collusion or strategic learning, since the change is abrupt, the quotes are submitted sealed, and the quotes themselves sometimes change from one day to the next in an identical fashion."

107. Abrantes-Metz and Sofia B. Villas-Boas (of UC-Berkeley's Department of Agricultural & Resource Economics) used another methodology—Benford second-digit reference distribution—to track the daily one-month LIBOR rate over the period 2005-2008.[31] Based on this analysis, the authors found that for sustained periods in 2006 and 2007, the empirical standard-deviation distribution differed significantly from the Benford reference distribution for nearly all banks submitting quotes. The authors also observed large deviations from Benford for a sustained period in 2008.

108. Those studies indicate at least a possibility that Defendants' suppression of LIBOR goes back even farther than August 2007.

D. <u>That At Least Some Defendants Faced Dire Financial Circumstances During the Relevant Period Further Renders Their Unduly Low LIBOR Quotes Striking.</u>

109. The independent economic analyses performed in connection with these proceedings, whose findings are corroborated by the publicly available scholarly work detailed above, strongly indicate Defendants' LIBOR quotes during the Relevant Period did not appropriately reflect those banks' actual borrowing costs at that time—and, indeed, that Defendants *collectively* suppressed LIBOR. Further illustrating the striking discrepancy between Defendants' submissions to the BBA and their actual borrowing costs, during 2008 and 2009 at least some of those banks' LIBOR quotes were too low in light of the dire financial circumstances the banks faced, which were described in numerous news articles from the

[31] Rosa M. Abrantes-Metz and Sofia B. Villas-Boas, "Tracking the Libor Rate," July 2010.

Relevant Period.

1. Citibank

110. On November 21, 2008, *The Wall Street Journal* reported that Citigroup executives "began weighing the possibility of auctioning off pieces of the financial giant or even selling the company outright" after the company faced a plunging stock price. The article noted Citigroup executives and directors "rushing to bolster the confidence of investors, clients and employees" in response to uncertainty about Citigroup's exposure to risk concerning mortgage-related holdings.[32] Similarly, On November 24, 2008, *CNNMoney* observed:

> If you combine opaque structured-finance products with current fair-value accounting rules, almost none of the big banks are solvent because that system equates solvency with asset liquidity. So at this moment Citi isn't solvent. Some argue that liquidity, not solvency, is the problem. But in the end it doesn't matter. Fear will drive illiquidity to such a point that Citi could be rendered insolvent under the current fair-value accounting system.[33]

111. On January 20, 2009, *Bloomberg* reported that Citigroup "posted an $8.29 billion fourth-quarter loss, completing its worst year, and plans to split in two under Chief Executive Officer Vikram Pandit's plan to rebuild a capital base eroded by the credit crisis. The article further stated, "***The problems of Citi, Bank of America and others suggest the system is bankrupt***." (Emphasis added).[34]

2. RBS, Lloyds, and HBOS

112. An April 23, 2008 analyst report from Société Générale reported, with respect to RBS's financial condition in the midst of its attempt to raise capital:

> Given the magnitude and change in direction in a mere eight weeks, we believe that management credibility has been tarnished.

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[32] *See* http://online.wsj.com/article/SB122722907151946371.html?mod=testMod.

[33] *See* http://money.cnn.com/2008/11/21/news/companies/benner_citi.fortune/.

[34] *See* http://www.bloomberg.com/apps/news?pid=21070001&sid=aS0yBnMR3USk.

> We also remain unconvinced that the capital being raised is in support of growth rather than merely to rebase and recapitalise a bank that overstretched itself at the wrong point in the cycle in its pursuit of an overpriced asset.
>
> * * *
>
> [I]n our eyes, RBS has not presented a rock solid business case that warrants investor support and the bank has left itself almost no capital headroom to support further material deterioration in either its assets or its major operating environments. We believe £16bn (7% core tier I ratio) would have provided a solid capital buffer.

The analysts also opined, "[W]e are not of the belief that all of RBS' problems are convincingly behind it." They further explained, "When faced with the facts and the events leading up to yesterday's request for a £12bn capital injection, we believe shareholders are being asked to invest further in order to address an expensive mishap in H2 07 rather than capitalise on growth opportunities."

113. On October 14, 2008, *Herald Scotland* reported a £37 billion injection of state capital into three leading banks, including RBS and HBOS. The article observed, "Without such near-nationalisations, . . . Royal Bank of Scotland and HBOS, would almost certainly have suffered a run on their remaining reserves and been plunged into insolvency. Their share prices could scarcely have taken much more of their recent hammering."[35]

114. On December 12, 2008, *Bloomberg* reported that shareholders approved HBOS's takeover by Lloyds TSB Group plc following bad-loan charges in 2008 rising to £5 billion and an increase in corporate delinquencies. The article also quoted analysts characterizing HBOS's loan portfolio as "'generally of a lower quality than its peers.'" *Bloomberg* further observed that HBOS suffered substantial losses on its bond investments, which totaled £2.2 billion, and losses

[35] *See* http://www.heraldscotland.com/reckless-banks-brought-this-financial-firestorm-down-upon-their-own-heads-1.891981.

on investments increased from £100 million to £800 million for the year.[36]

115. A January 20, 2009 analyst report from Société Générale stated: "We would note that given the 67% drop in the share price following [RBS]'s announcements yesterday [relating to capital restructuring due to greater-than-expected credit-market related write downs and bad debt impairments in Q4], the loss of confidence in the bank's ability to continue to operate as a private sector player and concern over the potential ineffectiveness of the Asset Protection Scheme may prompt the UK government to fully nationalise the bank. In this instance, the shares could have very limited value, if at all."[37]

116. On March 9, 2009, *Bloomberg* reported that Lloyds "will cede control to the British Government in return for state guarantees covering £260 billion ($A572 billion of risky assets)." The article further observed that in September 2008, Lloyds agreed to buy HBOS for roughly £7.5 billion as the British Government sought to prevent HBOS from collapsing after credit markets froze. The HBOS loan book was described as "more toxic than anyone ever dreamed."[38]

117. On November 24, 2009, *Bloomberg* reported the Bank of England provided £62 billion ($102 billion) of "taxpayer-backed emergency financing" to RBS and HBOS at the height of the financial crisis in October 2008 and that "[t]he [financing] operations were kept secret until now to prevent unnerving markets." The Bank's Deputy Governor Paul Tucker was quoted as stating in evidence to the Treasury Committee in London that "'[h]ad we not done it, the cycle would have been a lot worse…[and that] [t]his was tough stuff, a classic lender of last resort

[36] *See* http://www.bloomberg.com/apps/news?pid=newsarchive&sid=a4BTqdgwhPTc&refer=uk.

[37] *See* January 20, 2009 Société Générale analyst report on Royal Bank of Scotland titled "Little value left for shareholders."

[38] *See* http://www.businessday.com.au/business/lloyds-the-latest-uk-bank-to-be-rescued-20090308-8sfd.html.

operation.'"[39]

3. **WestLB**

118. A September 9, 2008 article in *Spiegel Online* reported WestLB was "heavily hit as a result of the US sub-prime crisis and the resulting credit crunch. Ill-advised speculation resulted in a 2007 loss of €1.6 billion -- leading the bank to the very brink of insolvency." The article reported that in early 2008, a special investment vehicle was set by WestLB's primary shareholders to "guarantee €5 billion worth of risky investments." The European Commissioner approved the public guarantee but demanded that the bank be "completely restructured to avoid failing afoul of competition regulations." The European Commissioner for Competition later warned that if WestLB did not significantly improve its restructuring package, Brussels would not approve the public assistance that European Union had already provided to the bank. Further, if that occurred, WestLB would have to pay back €12 billion to the EU.[40]

119. On November 24, 2009, *Bloomberg* reported that BNP Paribas SA said "[i]nvestors should buy the euro [ ] on speculation that capital will need to be repatriated to support German bank WestLB AG." Furthermore, two German regional savings bank groups that hold a majority stake in WestLB were "prepared to let the Dusseldorf-based lender become insolvent" and that "the prospect of insolvency may force state-owned banks and savings banks outside North Rhine-Westphalia, WestLB's home state, to contribute to capital injections." Moreover, WestLB needed "as much as 5 billion euros ($7.5 billion) in capital and may be shut by Nov. 30 unless a solution for its capital needs can be found."[41]

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[39] *See* http://www.bloomberg.com/apps/news?pid=21070001&sid=a9MjQj6MNTeA.

[40] *See* Anne Seith, Germany's WestLB under Attack from Brussels, SPIEGEL ONLINE, Sept. 9, 2008, http://www.spiegel.de/international/business/0,1518,druck-577142,00.html.

[41] *See* Matthew Brown, BNP Says Buy Euro on Speculation WestLB to Be Rescued (Update 1),

Footnote continued on next page

E. Defendants' Improper Activities Are the Focus of Governmental Investigations, Legal Proceedings, and Disciplinary Actions Worldwide.

120. As detailed below, investigations regarding LIBOR are ongoing in the United States, the United Kingdom, Switzerland, Japan, Canada, the European Union, and Singapore by nine different governmental agencies, including the DOJ, the SEC, and the CFTC.

121. Indeed, on February 27, 2012, the DOJ represented to the Court overseeing these multidistrict proceedings that the Justice Department "is conducting a criminal investigation into alleged manipulation of certain benchmark interest rates, including LIBORs of several currencies." The investigation consists of a joint effort by the DOJ's criminal and antitrust divisions.

122. Authorities are attempting to determine, among other things, "whether banks whose funding costs were rising as the financial crisis intensified tried to mask that trend by submitting artificially low readings of their daily borrowing costs."[42] Though the proceedings are ongoing, several Defendants have admitted that government entities—including the DOJ, the SEC, and the CFTC—have targeted them in seeking information about potential misconduct.

123. Moreover, documents submitted in connection with legal proceedings in Canada, Singapore, and Japan reveal that at least certain Defendants underreported their borrowing costs to artificially suppress Yen-LIBOR.

1. News reports and Defendants' regulatory filings indicate U.S. government and foreign regulatory bodies are engaged in expansive investigations of possible LIBOR manipulation.

124. The first public revelation regarding government investigations into possible

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Footnote continued from previous page
BLOOMBERG, Nov. 24, 2009,
http://www.bloomberg.com/apps/news?pid=21070001&sid=aI9ZPZShrjWI.

[42] Enrich, Mollenkamp, & Eaglesham, "U.S. Libor Probe Includes BofA, Citi, UBS."

LIBOR manipulation occurred on March 15, 2011, when UBS disclosed in a Form 20-F (annual report) filed with the SEC that the bank had "received subpoenas" from the SEC, the CFTC, and the DOJ "in connection with investigations regarding submissions to the [BBA]." UBS stated it understood "that the investigations focus on whether there were improper attempts by UBS, either acting on its own or together with others, to manipulate LIBOR rates at certain times." The bank further disclosed that it had "received an order to provide information to the Japan Financial Supervisory Agency concerning similar matters." UBS stated it was "conducting an internal review" and was "cooperating with the investigations."

125. On March 16, 2011, the *Financial Times* reported that UBS, BAC, Citigroup, and Barclays received subpoenas from U.S. regulators "probing the setting of" USD-LIBOR "between 2006 and 2008." The *Times* further noted investigators had "demanded information from" WestLB, and that the previous fall, "all 16 members of the committee that helped the [BBA] set the dollar Libor rate during 2006-08 received informal requests for information."[43]

126. The same day, *MarketWatch* similarly reported "[m]ultiple U.S. and European banks, which provide borrowing costs to calculate Libor every day, have been contacted by investigators," including the DOJ, the SEC, and the CFTC.[44]

127. The next day, *Bloomberg* reported that Barclays and Citigroup had received subpoenas from U.S. regulators and that Defendants WestLB, Lloyds, and BAC had been contacted by regulators. The article specified BAC had received subpoenas from the SEC and

[43] Brooke Masters, Patrick Jenkins & Justin Baer, "Banks served subpoenas in Libor case," FT.com, available at http://www.ft.com/cms/s/0/52958d66-501f-11e0-9ad1-00144feab49a.html#axzz1sJNEDIiI, last accessed on April 17, 2012.

[44] Carrick Mollenkamp and David Enrich, "Banks Probed in Libor Manipulation Case," *MarketWatch*, March 16, 2011.

the DOJ.[45]

128. On March 23, 2011, *Bloomberg* revealed that Citigroup Inc., Deutsche Bank, BAC, and JPMorgan Chase were asked by U.S. regulators "to make employees available to testify as witnesses" in connection with the regulators' ongoing investigation.[46]

129. The next day, the *Financial Times* reported that Defendant Barclays was "emerging as a key focus of the US and UK regulatory probe into alleged rigging of [LIBOR]." According to the *Times*, investigators were "probing whether communications between the bank's traders and its treasury arm," which helps set LIBOR, "violated 'Chinese wall' rules that prevent information-sharing between different parts of the bank." The *Times* further stated investigators were "said to be looking at whether there was any improper influence on Barclays' submissions" during 2006-2008 for the BBA's daily survey used to set LIBOR.[47]

130. Additional information regarding the regulatory probes emerged during the next few months, including revelations about other banks' possible—or actual—misconduct.

131. In an "Interim Management Statement" filed on April 27, 2011, for example, Barclays stated it was "cooperating with" the investigations by the UK Financial Services Authority, the CFTC, the SEC, and the DOJ "relating to certain past submissions made by Barclays to the [BBA], which sets LIBOR rates."

132. RBS similarly disclosed, in a Form 6-K filed with the SEC on May 6, 2011, the bank was "co-operating with" the investigations being conducted by the CFTC, the SEC, and the

[45] Gavin Finch and Jon Menon, "Barclays, Citigroup Said to Be Subpoenaed in Libor Probe," *Bloomberg*, March 17, 2011.

[46] Joshua Gallu and Donal Griffin, "Libor Probe Spurs Witness Call-up at Citigroup, Deutsche Bank," *Bloomberg*, March 23, 2011.

[47] Brooke Masters and Megan Murphy, "Barclays at centre of Libor inquiry," FT.com, March 24, 2011, available at http://www.ft.com/intl/cms/s/0/1c3228f6-5646-11e0-82aa-00144feab49a.html#axzz1sJNEDIiI, last accessed on April 17, 2012.

European Commission "into the submission of various LIBOR rates by relevant panel banks."

133. Soon after, on May 16, 2011, Lloyds disclosed that it too "had received requests for information as part of the Libor investigation and that it was co-operating with regulators, including the [CFTC] and the European Commission."[48] Britain's *Daily Telegraph* further reported that Defendant HBOS, which merged with Lloyds TSB in January 2009 to form Lloyds Banking Group, "was the main target given its near collapse in late 2008 as it lost access to wholesale funding markets."

134. On May 23, 2011, the *Telegraph* reported that the Federal Bureau of Investigation ("FBI") was working with regulators in connection with the LIBOR investigations, and the FBI's British counterpart, the Serious Fraud Office, "revealed it is also taking an active interest."

135. In a Form 6-K filed with the SEC on July 26, 2011, UBS disclosed that it had "been granted conditional leniency or conditional immunity from authorities in certain jurisdictions, including the Antitrust Division of the DOJ, in connection with potential antitrust or competition law violations related to submissions for Yen LIBOR and Euroyen TIBOR (Tokyo Interbank Offered Rate)." Accordingly, the company continued, it would "not be subject to prosecutions, fines or other sanctions for antitrust or competition law violations in connection with the matters [UBS] reported to those authorities, subject to [UBS's] continuing cooperation." The conditional leniency UBS received derives from the Antitrust Criminal Penalties Enhancement and Reform Act and the DOJ's Corporate Leniency Policy, under which the DOJ only grants leniency to corporations reporting *actual illegal activity*. UBS later disclosed (on February 7, 2012) that the Swiss Competition Commission had granted the bank conditional

[48] Harry Wilson, "Lloyds Banking Group in Libor investigation," *The Daily Telegraph*, May 17, 2011.

immunity regarding submissions for Yen LIBOR, TIBOR, and Swiss franc LIBOR.

136. Similar to the other Defendants discussed above, HSBC, in an interim report filed on August 1, 2011, disclosed that it and/or its subsidiaries had "received requests" from various regulators to provide information and were "cooperating with their enquiries."

137. On or about the same day, Barclays—which several months earlier had referenced its "cooperation" with governmental entities investigating potential misconduct relating to LIBOR—specified the investigations involved "submissions made by Barclays" and other LIBOR panel members. Barclays further stated it was engaged in discussions with those authorities about potential resolution of these matters before proceedings are brought against the bank.

138. On September 7, 2011, the *Financial Times* reported that as part of their LIBOR investigation, the DOJ and the CFTC—in assessing whether banks violated the Commodity Exchange Act, which can result in criminal liability—were examining "whether traders placed bets on future yen and dollar rates and colluded with bank treasury departments, who help set the Libor index, to move the rates in their direction," as well as "whether some banks lowballed their Libor submissions to make themselves appear stronger."[49]

139. On October 19, 2011, *The Wall Street Journal* reported that the European Commission "seized documents from several major banks" the previous day, "marking the escalation of a worldwide law-enforcement probe" regarding the Euro Interbank Offered Rate, or Euribor—a benchmark, set by more than 40 banks, used to determine interest rates on trillions of euros' worth of euro-denominated loans and debt instruments. The Euribor inquiry, the *Journal*

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[49] Brooke Masters and Kara Scannell, "Libor inquiry looks at criminal angle," FT.com, September 7, 2011, available at http://www.ft.com/cms/s/0/c8ed4248-d962-11e0-b52f-00144feabdc0.html#axzz1sRxAdyPS, last accessed on April 18, 2012.

explained, constitutes "an offshoot" of the broader LIBOR investigation that had been ongoing for more than a year. According to the *Journal*, while the list of financial firms raided by the European Commission was not available, people familiar with the situation had counted "a large French bank and a large German bank" among the targets, and the coordinated raids "occurred in London and other European cities."

140. On October 31, 2011, the *Financial News* observed that "[a]n investigation into price fixing, first ordered by the [SEC] in 2008, focused on whether banks, including UBS, Citigroup, and Bank of America, had been quoting deliberately low rates."[50]

141. On December 9, 2011, *Law360* reported that the Japanese Securities and Exchange Surveillance Commission ("SESC") alleged that Citigroup Global Markets Japan Inc. and UBS Securities Japan Ltd. "employed staffers who attempted to influence" TIBOR "to gain advantage on derivative trades." The SESC recommended that the Japanese prime minister and the head of Japan's Financial Services Agency ("JFSA") take action against the companies. The Commission specified that Citigroup's head of G-10 rates and a Citigroup trader, as well as a UBS trader, were involved in the misconduct, further stating, "[t]he actions of Director A and Trader B are acknowledged to be seriously unjust and malicious, and could undermine the fairness of the markets." Moreover, the Commission added, "[i]n spite of recognizing these actions, the president and CEO . . . who was also responsible for the G-10 rates, overlooked these actions and the company did not take appropriate measures, therefore, the company's internal control system is acknowledged to have a serious problem."[51] *Law360* reported that the SESC released "a similar statement" about UBS's alleged conduct.

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[50] Tom Osborn, "Is Libor in its death throes?", *Financial News*, October 31, 2011.

[51] Juan Carlos Rodriguez, "Japan Accuses Citi, UBS Of Market Trickery," *Law360*, December 9, 2011.

142. Citigroup and UBS did not deny the SESC's findings. A Citigroup spokesperson stated, "Citigroup Global Markets Japan takes the matter very seriously and sincerely apologizes to clients and all parties concerned for the issues that led to the recommendation. The company has started working diligently to address the issues raised." A UBS spokesperson similarly stated the bank was taking the findings "very seriously" and had been "working closely with" the SESC and the JFSA "to ensure all issues are fully addressed and resolved." She added, "We have taken appropriate personnel action against the employee involved in the conduct at issue."

143. Citigroup later disclosed that on December 16, 2011, the JFSA took administrative action against Citigroup Global Markets Japan, Inc. ("CGMJ") for, among other things, certain communications made by two CGMJ traders about the Euroyen Tokyo InterBank Offered Rate ("TIBOR"). The JFSA issued a business improvement order and suspended CGMJ's trading in derivatives related to Yen-LIBOR, as well as Euroyen and Yen-TIBOR from January 10 to January 23, 2012. On the same day, the JFSA also took administrative action against Citibank Japan Ltd. for conduct arising out of Citibank Japan's retail business and also noted that the communications made by the CGMJ traders to employees of Citibank Japan about Euroyen TIBOR had not been properly reported to Citibank Japan's management team.

144. UBS likewise recently revealed further details regarding the Japanese regulators' findings and the resulting disciplinary action. Specifically, the bank announced that on December 16, 2011, the JFSA commenced an administrative action against UBS Securities Japan Ltd. ("UBS Securities Japan") based on findings by the SESC that:

> (i) a trader of UBS Securities Japan engaged in inappropriate conduct relating to Euroyen TIBOR and Yen LIBOR, including approaching UBS AG, Tokyo Branch, and other banks to ask them to submit TIBOR rates taking into account requests from the trader

> for the purpose of benefiting trading positions; and (ii) serious problems in the internal controls of UBS Securities Japan resulted in its failure to detect this conduct.

Based on those findings, the JFSA "issued a Business Suspension Order requiring UBS Securities Japan to suspend trading in derivatives transactions related to Yen LIBOR and Euroyen TIBOR" from January 10 to January 16, 2012 (excluding transactions required to perform existing contracts). The JFSA also issued a "Business Improvement Order" requiring UBS Securities Japan to enhance "compliance with its legal and regulatory obligations" and to establish a "control framework" designed to prevent similar improper conduct.

145. *The Wall Street Journal* has since cited people familiar with the UBS matter as identifying the trader as Thomas Hayes, who joined UBS Securities Japan in 2006 "and traded products linked to the pricing of short-term yen-denominated borrowings"; he worked at UBS for about three years.[52]

146. In the same article, the *Journal* more broadly reported that investigators in the U.S. and foreign LIBOR probes "are focusing on a small number of traders suspected of trying to influence other bank employees to manipulate the rates."

147. Other news accounts in recent months have confirmed—based at least in part on information from people familiar with the ongoing investigations—that investigators are examining potential improper collusion by traders and bankers to manipulate LIBOR or other rates. On February 3, 2012, for instance, Credit Suisse disclosed that the Swiss Competition Commission commenced an investigation involving twelve banks and certain other financial intermediaries, including Credit Suisse, concerning alleged collusive behavior among traders to

[52] Jean Eaglesham, Atsuko Fukase, & Sam Holmes, "Rate Probe Keys On Traders: Investigators Suspect Employees at Some Banks Tried to Manipulate Rates," *The Wall Street Journal*, February 7, 2012.

affect the bid ask spread for derivatives tied to the LIBOR and TIBOR reference rates fixed with respect to certain currencies, and collusive agreements to influence these rates.

148. Additionally, on February 14, 2012, *Bloomberg* reported that two people with knowledge of the ongoing LIBOR probe said global regulators "have exposed flaws in banks' internal controls that may have allowed traders to manipulate interest rates around the world." The same people, who were not identified by name (as they were not authorized to speak publicly about those matters), stated investigators also had "received e-mail evidence of potential collusion" between firms setting LIBOR. Those sources further noted Britain's Financial Services Authority was "probing whether banks' proprietary-trading desks exploited information they had about the direction of Libor to trade interest-rate derivatives, potentially defrauding their firms' counterparties."[53]

149. *Bloomberg* further reported that RBS had "dismissed at least four employees in connection with the probes," and Citigroup and Deutsche Bank "also have dismissed, put on leave or suspended traders as part of the investigations."

150. *Bloomberg* also reported that European Union antitrust regulators are also investigating whether banks effectively formed a global cartel and coordinated how to report borrowing costs between 2006 and 2008.

151. In March 2012, the Monetary Authority of Singapore disclosed that it has been approached by regulators in other countries to help in investigations over the possible manipulation of interbank interest rates.[54]

152. According to the *Daily Mail*, investigations by the SEC, Britain's Financial

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[53] Lindsay Fortado and Joshua Gallu, "Libor Probe Said to Expose Collusion, Lack of Internal Controls," *Bloomberg*, February 14, 2012.

[54] *Business Times*, March 9, 2012.

Services Authority, the Swiss Competition Commission, and regulators in Japan focus on three concerns: First, whether banks artificially suppressed LIBOR during the financial crisis, making banks appear more secure than they actually were; second, whether bankers setting LIBOR leaked their data to traders before officially submitting the banks' LIBOR quotes to the BBA; third, whether traders at the banks, and at other organizations (such as hedge funds), may have tried to influence LIBOR by making suggestions or demands on the bankers providing LIBOR quotes.

2. Evidence disclosed to date in proceedings in Canada and Singapore confirms that certain Defendants conspired to manipulate Yen-LIBOR.

153. Documents submitted in pending legal proceedings in Canada and Singapore strongly indicate some Defendants manipulated Yen-LIBOR, the Yen-based rate set by a 15-member BBA panel that, during the Relevant Period consisted of (and still consists of) many of the same banks whose borrowing-cost quotes determine USD-LIBOR, including Barclays, Citibank, Deutsche Bank, HSBC, JPMorgan Chase, Lloyds, RBS, and UBS. The facts (some provided by Defendants themselves) demonstrating Defendants' misconduct with respect to Yen-LIBOR illustrate both their desire and ability to manipulate interest rates, and the method by which they have done so.

a. Canadian Proceedings

154. In the Canadian action, Brian Elliott, a Competition Law Officer in the Criminal Matters Branch of the Competition Bureau, submitted an affidavit in May 2011 (the "May 2011 Elliott Affidavit") in support of "an Ex Parte Application for Orders to Produce Records Pursuant to Section 11 of the Competition Act and for Sealing Orders" in the Court of Ontario, Superior Court of Justice, East Region. Specifically, the May 2011 Elliott Affidavit sought orders requiring HSBC Bank Canada, Royal Bank of Scotland N.V., Canada Branch, Deutsche

Bank, J.P. Morgan Bank Canada, and Citibank Canada (referenced collectively in the Affidavit as the "Participant Banks") to produce documents in connection with an inquiry concerning whether those banks conspired to "enhance unreasonably the price of interest rate derivatives from 2007 to March 11, 2010; to prevent or lessen, unduly, competition in the purchase, sale or supply of interest derivatives from 2007 to March 11, 2010; to restrain or injure competition unduly from 2007 to March 11, 2010; and to fix, maintain, increase or control the price for the supply of interest rate derivatives from March 12, 2010 to June 25, 2010."

155. The May 2011 Elliott Affidavit further states the Competition Bureau "became aware of this matter" after one of the banks (referenced in the affidavit as the "Cooperating Party") "approached the Bureau pursuant to the Immunity Program" and, in connection with that bank's application for immunity, its counsel "orally proffered information on the Alleged Offences" to officers of the Competition Bureau on numerous occasions in April and May 2011. Furthermore, according to the Affidavit, counsel for the Cooperating Party "stated that they have conducted an internal investigation of the Cooperating Party that included interviews of employees of the Cooperating Party who had knowledge of or participated in the conduct in question, as well as a review of relevant internal documents." The Affidavit also notes that on May 17, 2011, counsel for the Cooperating Party provided the Competition Bureau with "electronic records," which Elliot "believe[s] to be records of some of the communications involving the Cooperating Party that were read out as part of the orally proffered information by counsel for the Cooperating Party."

156. The Affidavit recounted that, the Cooperating Party's counsel, during the relevant period the Participant Banks—at times "facilitated" by "Cash Brokers"—"entered into agreements to submit artificially high or artificially low London Inter-Bank Offered Rate

('LIBOR') submissions in order to impact the Yen LIBOR interest rates published by the [BBA]." Those entities engaged in that misconduct to "adjust[] the prices of financial instruments that use Yen LIBOR rates as a basis." The Affidavit further states the Cooperating Party's counsel "indicated the Participant Banks submitted rates consistent with the agreements and were able to move Yen LIBOR rates to the overall net benefit of the Participants."

157. More specifically, counsel proffered that during the relevant period, the Participant Banks "communicated with each other and through the Cash Brokers to form agreements to fix the setting of Yen LIBOR," which "was done for the purpose of benefiting trading positions, held by the Participant Banks, on IRDs [interest rate derivatives]." By manipulating Yen LIBOR, the Affidavit continues, "the Participant Banks affected all IRDs that use Yen LIBOR as a basis for their price." The misconduct was carried out "through e-mails and Bloomberg instant messages between IRD traders at the Participant Banks and employees of Cash Brokers (who had influence in the setting of Yen LIBOR rates)." The Affidavit details:

> IRD traders at the Participant Banks communicated with each other their desire to see a higher or lower Yen LIBOR to aid their trading position(s). These requests for changes in Yen LIBOR were often initiated by one trader and subsequently acknowledged by the trader to whom the communication was sent. The information provided by counsel for the Cooperating Party showed that the traders at Participant Banks would indicate their intention to, or that they had already done so, communicate internally to their colleagues who were involved in submitting rates for Yen LIBOR. The traders would then communicate to each other confirming that the agreed up rates were submitted. However, not all attempts to affect LIBOR submissions were successful.
>
> The Cash Brokers were asked by IRD traders at the Participant Banks to use their influence with Yen LIBOR submitters to affect what rates were submitted by other Yen LIBOR panel banks, including the Participant Banks.

158. The Affidavit indicates the Cooperating Party's counsel further proffered that at least one of the Cooperating Party's IRD traders ("Trader A" or "Trader B") communicated with

an IRD trader at HSBC, Deutsche Bank, RBS, JPMorgan (two traders), and Citibank. In that regard, the Affidavit specifies:

> Trader A communicated his trading positions, his desire for a certain movement in Yen LIBOR and instructions for the HSBC trader to get HSBC to make Yen LIBOR submissions consistent with his wishes. Attempts through the HSBC trader to influence Yen LIBOR were not always successful. Trader A also communicated his desire for a certain movement in the Yen LIBOR rate with the Cash Brokers. He instructed them to influence the Yen LIBOR submitters of HSBC. The Cash Brokers acknowledged making these attempts.
>
> Trader A communicated his trading positions, his desire for certain movement in Yen LIBOR and asked for the Deutsche IRD trader's assistance to get Deutsche to make Yen LIBOR submissions consistent with his wishes. The Deutsche IRD trader also shared his trading positions with Trader A. The Deutsche IRD trader acknowledged these requests. Trader A also aligned his trading positions with the Deutsche IRD trader to align their interests in respect of Yen LIBOR. The Deutsche IRD trader communicated with Trader A considerably during the period of time, mentioned previously, when Trader A told a Cash Broker of a plan involving the Cooperating Party, HSBC and Deutsche to change Yen LIBOR in a staggered and coordinated fashion by the Cooperating Party, HSBC and Deutsche. Not all attempts to change the LIBOR rate were successful.
>
> Trader A explained to RBS IRD trader who his collusive contacts were and how he had and was going to manipulate Yen LIBOR. Trader A also communicated his trading positions, his desire for certain movement in Yen LIBOR and gave instructions for the RBS IRD trader to get RBS to make Yen LIBOR submissions consistent with Trader A's wishes. The RBS IRD trader acknowledged these communications and confirmed that he would follow through. Trader A and the RBS IRD trader also entered into transactions that aligned their trading interest in regards to Yen LIBOR. Trader A also communicated to another RBS IRD trader his trading positions, his desire for a certain movement in Yen LIBOR and instructions to get RBS to make Yen LIBOR submissions consistent with his wishes. The second RBS IRD trader agreed to do this.
>
> Trader A communicated his trading positions, his desire for a certain movement in Yen LIBOR and gave instructions for them [two JPMorgan IRD traders] to get JPMorgan to make Yen LIBOR

> submissions consistent with his wishes. Trader A also asked if the IRD traders at JPMorgan required certain Yen LIBOR submissions to aid their trading positions. The JPMorgan IRD traders acknowledged these requests and said that they would act on them. On another occasion, one of the JPMorgan IRD traders asked Trader A for a certain Yen LIBOR submission, which Trader A agreed to help with. Trader A admitted to an IRD trader at RBS that he colluded with IRD traders at JPMorgan.
>
> Trader B of the Cooperating Party communicated with an IRD trader at Citi. They discussed their trading positions, advanced knowledge of Yen LIBOR submissions by their banks and others, and aligned their trading positions. They also acknowledged efforts to get their banks to submit the rates they wanted.

159. On May 18, 2011, the Ontario Superior Court signed the orders directing the production of the records sought by the May 2011 Elliott Affidavit. But to the Schwab Funds' knowledge, the Affidavit was not publicly available until February 2012.

160. Elliott submitted another affidavit in June 2011 (the "June 2011 Elliott Affidavit"), which sought an order requiring ICAP Capital Markets (Canada) Inc., believed to be one of the "Cash Brokers" referenced in the May 2011 Elliott Affidavit, to "produce records in the possession of its affiliates, ICAP PLC and ICAP New Zealand Ltd." The June 2011 Elliott Affidavit primarily detailed communications between "Trader A" (an IRD trader) of the previously-referenced "Cooperating Party" and an ICAP broker (referenced in the June 2011 Elliott Affidavit as "Broker X") during the relevant period.

161. The Affidavit specifies that Trader A "discussed his current trading positions with Broker X and where he would like to see various maturities of Yen LIBOR move." Trader A "asked Broker X for Yen LIBOR submissions that were advantageous to Trader A's trading positions," and Broker X, in turn, "acknowledged these requests and advised Trader A about his efforts to make them happen." The Affidavit further states:

> Counsel for the Cooperating Party has proffered that the expectation was for Broker X, directly or through other brokers at

> ICAP, to influence the Yen LIBOR submissions of Panel Banks. Broker X communicated to Trader A his efforts to get brokers at ICAP in London to influence Yen LIBOR Panel Banks in line with Trader A's requests. The efforts of Broker X included contacting a broker at ICAP in London who issued daily LIBOR expectations to the market. Trader A also communicated to Broker X his dealings with traders at other Participant Banks and a broker at another Cash Broker. Not all efforts to influence Yen LIBOR panel banks were successful. Broker X had additional discussions around the setting of Yen LIBOR with another trader of the Cooperating Party ("Trader B").

162. On June 14, 2011, the Ontario Superior Court issued an order allowing the document requests concerning ICAP.

163. The press has reported that UBS was the "Cooperating Party" referred to in the Elliott Affidavits.

b. <u>Singapore Action</u>

164. In addition to UBS's admissions in the Canadian proceedings, in a pending legal action in Singapore's High Court, Tan Chi Min, former head of delta trading for RBS's global banking and markets division in Singapore (who worked for RBS from August 12, 2006 to November 9, 2011), alleges in his Writ of Summons and Statement of Claim that the bank condoned collusion between its traders and LIBOR rate-setters to set LIBOR at levels to maximize profits. In the same filing, Min stated RBS commenced an internal probe following inquiries by European and U.S. authorities about potential LIBOR manipulation.

165. Min—whom RBS terminated, asserting he engaged in "gross misconduct"—alleges that RBS's internal investigations "were intended to create the impression that such conduct was the conduct not of the defendant itself but the conduct of specific employees who the defendant has sought to make scapegoats through summary dismissals." Min further alleges that it was "part of his responsibilities to provide input and submit requests to the rate setter and there is no regulation, policy, guideline or law that he has infringed in doing this," and that "it

was common practice among [RBS]'s senior employees to make requests to [RBS]'s rate setters as to the appropriate LIBOR rate." Those requests, Min specified, "were made by, among others, Neil Danziger, Jezri Mohideen (a senior manager), Robert Brennan (a senior manager), Kevin Liddy (a senior manager) and Jeremy Martin," and the practice "was known to other members of [RBS]'s senior management including Scott Nygaard, Todd Morakis and Lee Knight." Min added that RBS employees "also took requests from clients (such as Brevan Howard) in relation to the fixing of LIBOR."

166. Indeed, in responding to Min's allegations, RBS admitted he had tried to improperly influence RBS rate-setters from 2007 to 2011 to submit LIBOR rates at levels that would benefit him.

167. In his complaint, however, Min alleged that he could not have influenced the rate on his own. He also stated it was "common practice" among RBS's senior employees to make requests as to the appropriate LIBOR rate.

THE SCHWAB FUNDS DID NOT KNOW, NOR COULD THEY REASONABLY HAVE KNOWN, ABOUT DEFENDANTS' MISCONDUCT UNTIL AT LEAST MARCH 2011

168. Before UBS's March 15, 2011 announcement that it had been subpoenaed in connection with the U.S. government's investigation into possible LIBOR manipulation, the Schwab Funds had not discovered, and could not with reasonable diligence have discovered, facts indicating Defendants were engaging in misconduct that caused LIBOR to be artificially depressed during the Relevant Period.

169. Moreover, though some market participants voiced concerns in late 2007-early 2008 that LIBOR did not reflect banks' true borrowing costs, those concerns were quickly—though, it now turns out, wrongly—dismissed.

A. <u>Defendants' Unlawful Activities Were Inherently Self-Concealing.</u>

170. Defendants conspired to share information regarding their LIBOR quotes and to misrepresent their borrowing costs to the BBA. In so doing, Defendants aimed to—and did—depress LIBOR to artificially low levels, which allowed them to pay unduly low interest rates on LIBOR-based financial instruments they or others issued or sold to investors, including the Schwab Funds.

171. Defendants' misconduct was, by its very nature, self-concealing. <u>First</u>, those banks' actual or reasonably expected costs of borrowing were not publicly disclosed, rendering it impossible for investors, including the Schwab Funds, to discern (without sophisticated expert analysis) any discrepancies between Defendants' publicly disclosed LIBOR quotes and other measures of those banks' actual or reasonably expected borrowing costs. <u>Second</u>, communications within and among the banks likewise were not publicly available, which further precluded investors, including the Schwab Funds, from discovering Defendants' misconduct, even with reasonable diligence.

172. As a result of the self-concealing nature of Defendants' collusive scheme, no person of ordinary intelligence would have discovered, or with reasonable diligence could have discovered, facts indicating Defendants were unlawfully suppressing LIBOR during the Relevant Period.

B. <u>The BBA and Defendants Deflected Concerns Raised By Some Market Observers and Participants In Late 2007 and Early 2008 About LIBOR's Accuracy.</u>

173. In November 2007, a concern arose among some in the U.K. banking community that the members of the USD-LIBOR panel might be understating their true costs of borrowing, thus causing LIBOR to be set artificially low. Some U.K. banks raised their concerns at a meeting of the Bank of England that month.

174. In response to those concerns, specifically "anecdotal evidence gathered from conversation with market participants . . . that the rates quoted and paid by banks on their interbank borrowing tended to vary more than usual (and by more than what appears in the LIBOR panel) during the turbulence," the Bank for International Settlements ("BIS") in Spring 2008 produced a study of USD-LIBOR. The BIS examined the difference, or "spread," between USD-LIBOR and OISs, which are viewed as virtually risk-free, thus the positive difference between LIBOR and interest rates on those swaps should reflect the credit risk of the quoting banks. The BIS then compared the LIBOR-OIS spread to the cost of CDS insurance on the BBA panel banks' debt. Absent manipulation, those two values should exhibit a stable relationship, because they both depend on the same thing: the credit risk of the quoting banks.

175. Contrary to that expectation, the BIS found an unusually "loose" relationship between CDS premiums and the LIBOR-OIS spread, beginning in August 2007 and continuing at least into 2008, when the BIS published its findings. During that time, CDS premiums led the LIBOR-OIS spread in an upward trend. In other words, the cost of CDS insurance on the panel banks' debt increased more swiftly than the difference between LIBOR and interest rates on OIS, when the two values should have behaved similarly.

176. In May 2008, after *The Wall Street Journal* reported its LIBOR analysis (detailed above), strategist Tim Bond of Barclays, admitted "the rates the banks were posting to the BBA became a little divorced from reality" during 2007-2008, adding:

> We had one week in September where our treasurer, who takes his responsibilities pretty seriously, said, "Right, I've had enough of this, I'm going to quote the right rates". All we got for our pains was a series of media articles saying that we were having difficulty financing.[55]

[55] http://www.telegraph.co.uk/finance/newsbysector/banksandfinance/2790833/Libor-credibility-

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177. Additionally, in a report published mid-April 2008 entitled "Is LIBOR Broken?", Citigroup's Scott Peng wrote "Libor at times no longer represents the level at which banks extend loans to others." He concluded that LIBOR was suppressed by 30 basis points. Peng resigned approximately one year later. Reports of his resignation referenced his disclosures about LIBOR. On April 18, 2008, Credit Suisse's William Porter, a credit strategist, estimated an even greater suppression: 40 bps (as reported that day by *The Wall Street Journal*).

178. On April 3, 2008, the Bank of England money-market committee held a meeting of U.K. banks. The minutes of that meeting state: "U.S. Dollar Libor rates had at times appeared lower than actual traded interbank rates."

179. As a result of the concerns and statements recounted above, the BBA conducted an inquiry regarding LIBOR. Notably, shortly after the BBA announced its investigation, the LIBOR panel banks raised their quotes, causing LIBOR to log its biggest increase since August 2007. The banks, including the LIBOR Panel Defendants, thus falsely and misleadingly signaled that any improper reporting of false rates that may have previously occurred had ended.

180. Additionally, the BBA ultimately determined (wrongly) that LIBOR had not been manipulated, thus providing further (incorrect) assurance to investors that the concerns expressed by some market participants were unfounded.

181. Moreover, Defendants engaged in a media strategy that diffused the speculation that had arisen concerning LIBOR—and further concealed their conduct. On April 21, 2008, for instance, Dominic Konstam of Credit Suisse affirmatively stated the low LIBOR rates were attributable to the fact that U.S. banks, such as Citibank and JPMorgan, had access to large customer deposits and borrowing from the Federal Reserve and did not need more expensive

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loans from other banks: "Banks are hoarding cash because funding from the asset-backed commercial paper market has fallen sharply while money market funds are lending on a short term basis and are restricting their supply."[56]

182. In an April 28, 2008 interview with the *Financial Times,* Konstam continued to defend LIBOR's reliability:

> Libor has been a barometer of the need for banks to raise capital. The main problem with Libor is the capital strains facing banks … Initially there was some confusion that Libor itself was the problem, with talk of the rate being manipulated and not representative of the true cost of borrowing.[57]

183. On May 16, 2008, in response to a media inquiry, JPMorgan commented "[t]he Libor interbank rate-setting process is not broken, and recent rate volatility can be blamed largely on reluctance among banks to lend to each other amid the current credit crunch."[58]

184. The same day, Colin Withers of Citigroup assured the public that LIBOR remained reliable, emphasizing "the measures we are using are historic -- up to 30 to 40 years old."[59]

185. And in May 2008, *The Wall Street Journal* asked numerous Defendants to comment on the media speculation concerning aberrations in LIBOR. Rather than declining or

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[56] Gillian Tett & Michael Mackenzie, "Doubts Over Libor Widen," FT.com, available at http://www.ft.com/cms/s/0/d1d9a792-0fbd-11dd-8871-0000779fd2ac.html#axzz1szdS58jE, last accessed on April 24, 2012.

[57] Michael Mackenzie, "Talk of quick fix recedes as Libor gap fails to close," FT.com, available at http://www.ft.com/intl/cms/s/0/3da27a46-5d05-11dd-8d38-000077b07658.html#axzz1szdS58jE, last accessed on April 24, 2012.

[58] Kirsten Donovan, Jamie McGeever, Jennifer Ablan, Richard Leong & John Parry, "European, U.S. bankers work on Libor problems," reuters.com, available at http://in.reuters.com/article/2008/05/16/markets-rates-bba-idINL162110020080516, last accessed on April 24, 2012.

[59] *Id.*

refusing to comment, those Defendants made affirmative representations designed to further conceal their wrongdoing. On May 29, 2008, for instance, Citibank affirmatively claimed innocence and stated it continued to "submit [its] Libor rates at levels that accurately reflect [its] perception of the market." HBOS similarly asserted its LIBOR quotes constituted a "genuine and realistic" indication of the bank's borrowing costs.[60]

C. <u>Expert Analysis Performed In Connection With These Proceedings Indicates LIBOR's Increase Following Expressions of Concern Over LIBOR's Viability Resulted from Defendants' Attempt to Conceal Their Misconduct.</u>

186. On April 17, 2008, the day after *The Wall Street Journal* initially reported on LIBOR's anomalous behavior and the BBA stated it would conduct an inquiry concerning LIBOR, there was a sudden jump in USD-LIBOR—the three-month borrowing rate hit 2.8175% that day, about eight basis points more than the previous day's rate of 2.735%.

187. Suspiciously, reported LIBOR rates for other currencies fell or remained relatively flat at the time USD-LIBOR rose, a sign that the latter was susceptible to manipulation.

188. A consulting expert engaged by other plaintiffs in these coordinated proceedings has conducted an analysis of the change in LIBOR on April 17, 2008. The analysis tested the hypothesis that if banks did not manipulate LIBOR, there would be no systematic changes in LIBOR expected on April 17, whereas if banks did manipulate LIBOR—and were responding to *The Wall Street Journal* article and the BBA's announcement following it—the reporting banks would be likely to reduce or abandon the manipulation immediately in response to those events. An immediate reduction in LIBOR manipulation would result in an increase in LIBOR quotes by the member banks on April 17, 2008.

[60] Carrick Mollenkamp & Mark Whitehouse, "Study Casts Doubt on Key Rate."

189. To conduct the analysis, the consulting expert ran a regression using the daily changes in LIBOR. Table 1 below shows the study results. As discussed above, LIBOR increased on April 17, 2008 at a statistically significant level. Moreover, 10 of the 16 bank quote increases were statistically significant. These findings were consistent with the hypothesis that the banks manipulated and suppressed LIBOR.

Table 1

	Changes in LIBOR on April 17, 2008*			
	Dependent variable	**Average change in LIBOR during the period 1/5/2000 – 5/13/2011**	**April 17, 2008 Reported Increase**	**Statistical Significance at the 1-5% level of the April 17, 2008 move**
1	BBA LIBOR	-0.00203	0.08578	5%
2	HSBC LIBOR	-0.00167	0.12167	1%
3	JPMC LIBOR	-0.00203	0.08203	5%
4	BARCLAYS LIBOR	-0.00202	0.10202	5%
5	WEST LB LIBOR	-0.00199	0.09199	5%
6	RBS LIBOR	-0.00201	0.08701	5%
7	RABOBANK LIBOR	-0.00206	0.08206	5%
8	CITI LIBOR	-0.00203	0.09703	5%
9	UBS LIBOR	-0.00245	0.09745	5%
10	NORIN LIBOR	-0.00204	0.09204	5%
	*Statistical significance is assessed using a AR(3) model for the residuals.			

190. An alternative hypothesis is that, in addition to reacting to the *Journal*, other confounding effects that are related to the risk of the banks could have emerged on April 16, 2008 and April 17, 2008. This alternative hypothesis also predicts an increase in LIBOR. To test this alternative hypothesis, instead of looking at daily changes in LIBOR quotes, it is possible to see daily changes in the difference between banks' LIBOR quotes and the Federal

Reserve Eurodollar Deposit Rate (the "Spread"). If risk related factors played a role, they would affect both the banks' LIBOR quotes as well as the Federal Reserve's Eurodollar Deposit Rate. Thus, if this hypothesis is correct, one should not see any changes to the Spread on April 17, 2008, since these two effects should cancel out. However, if there were no risk related news and only a reaction to the *Journal* article and the BBA announcement played a major role, then only LIBOR would be affected, leaving Federal Reserve's Eurodollar Deposit Rate mostly unaffected. In this case, the Spread would again be expected to increase.

191. The test of this alternative hypothesis showed that the Spreads of all 16 panel banks increased on April 17, 2008, and, as shown in Table 2 below, 11 of the 16 changes were statistically significant at levels ranging from 1% to 5%. Once again, these finding were consistent with the manipulation hypothesis and inconsistent with the hypothesis that other risk factors explained the April 17, 2008 shock to the LIBOR rate.

Table 2

Changes in Spread on April 17, 2008*

	Dependent variable	**Average change in LIBOR during the period 1/5/2000 – 5/13/2011**	**April 17, 2008 Reported Increase**	**Statistical Significance at the 1-5% level of the April 17, 2008 move**
1	BBA LIBOR Spread	-0.00007507	0.08383	5%
2	HSBC LIBOR Spread	0.00024665	0.11975	1%
3	JPMC LIBOR Spread	-0.00016117	0.08016	5%
4	BARCLAYS LIBOR Spread	-0.00010337	0.1001	1%
5	RBS LIBOR Spread	-0.00010924	0.08511	5%
6	TOKYO LIBOR Spread	0.00001534	0.07998	5%
7	CITI LIBOR Spread	-0.00016073	0.09516	5%
8	CS LIBOR Spread	-0.0001738	0.07017	5%

9	RBC LIBOR Spread	-0.00010722	0.09511	5%
10	UBS LIBOR Spread	-0.00011816	0.09512	5%
11	NORIN LIBOR Spread	-0.00020698	0.09021	1%
	* Statistical significance is assessed using a AR(3) model for the residuals.			

192. The conclusions of this study are consistent with the contemporaneous views expressed by high-level employees of various Defendant panel banks recounted above.

D. Investors, Including the Schwab Funds, Certainly Could Not Have Known Or Reasonably Discovered—Until At Least March 2011—Facts Suggesting Defendants *Knowingly Colluded* To Suppress LIBOR.

193. Notwithstanding the smattering of statements in late 2007-early 2008 questioning LIBOR's viability, the Schwab Funds had no reason to suspect—at least until the existence of government investigations was revealed in March 2011—that Defendants were *knowingly colluding* to suppress LIBOR. Indeed, as a result of Defendants' secret conspiracy—and their fraudulent concealment of relevant information—no facts arose before March 2011 to put the Schwab Funds on inquiry notice that a conspiracy to manipulate LIBOR existed.

THE SCHWAB FUNDS HAVE SUFFERED SIGNIFICANT HARM AS A RESULT OF DEFENDANTS' MISCONDUCT

A. Defendants' Suppression of LIBOR Broadly Impacted LIBOR-Based Financial Instruments.

194. Throughout the Relevant Period, Defendants' manipulation of LIBOR caused damage to the Schwab Funds by artificially depressing the value of tens of billions of dollars in LIBOR-based financial instruments the Funds held or purchased. Most of those instruments fall into one of the following categories.

195. Floating-rate instruments. Throughout the Relevant Period, the Schwab Funds bought and usually held to maturity floating-rate instruments indexed to LIBOR. These obligations paid a rate of return based on LIBOR; specifically, they paid LIBOR plus an

additional fixed rate of return. These floating-rate instruments included, among others, commercial paper and certificates of deposit. "Commercial paper" refers to an unsecured promissory obligation with a fixed maturity typically of up to nine months. Such obligations are issued and sold by large corporations and banks in order to raise short-term funds. "Certificates of deposit" are time deposits with a financial institution such as a credit union or bank. Defendants' suppression of LIBOR caused the Schwab Funds to receive lower returns on these obligations than they would have if LIBOR had been properly set, which was a foreseeable result of Defendants' misconduct. The Funds relied on the accuracy of LIBOR in undertaking these transactions.

196. The floating-rate instruments affected by Defendants' misconduct include those (i) issued or sold to the Schwab Funds by Defendants, (ii) sold to the Funds by subsidiaries or other affiliates of Defendants, and (iii) issued or sold to the Funds by third parties.

197. Fixed-rate instruments. Throughout the Relevant Period, the Schwab Funds bought, and usually held to maturity, fixed-rate instruments such as commercial paper and certificates of deposit, which paid a fixed rate of return. When considering whether to purchase a fixed-rate instrument, the Funds always evaluated the difference (or "spread") between the offered rate and LIBOR. A large positive spread to LIBOR might make the offering "rich," depending on the credit risk of the issuer. A lower positive spread or a negative spread might make the offering less attractive, again depending on the quality of the issuer. This is a common analysis undertaken by participants in these markets. Thus, suppressing LIBOR would always, and obviously, tend to suppress the rates of return on fixed-rate instruments by making lower rates of return relatively more attractive. Defendants' suppression of LIBOR caused the Schwab Funds to receive lower returns on these obligations than they would have if LIBOR had been

properly set. The Funds relied on the accuracy of LIBOR in undertaking these transactions, which was a foreseeable result of Defendants' misconduct.

198. The fixed-rate instruments affected by Defendants' misconduct include those (i) issued or sold to the Schwab Funds by Defendants, (ii) sold to the Funds by subsidiaries or other affiliates of Defendants, and (iii) issued or sold to the Funds by third parties.

B. The Schwab Funds Collectively Purchased Billions of Dollars In LIBOR-Based Financial Instruments That Paid Unduly Low Interest Rates.

199. During the Relevant Period, the Schwab Funds purchased billions of dollars in LIBOR-based financial instruments impacted by Defendants' misconduct, including instruments issued or sold by Defendants or sold by dealer entities that were subsidiaries of, or otherwise affiliated with, Defendants, including, among others: (i) Deutsche Bank Securities; (ii) Banc of America Securities, LLC; (iii) Barclays Capital Inc.; (iv) Credit Suisse Securities (USA) LLC; (v) UBS Financial Services Inc.; (vi) Citigroup Global Markets Inc.; (vii) Citigroup Funding, Inc.; (viii) RBS Securities, Inc. (f/k/a Greenwich Capital Markets, Inc.); (ix) Bank of Scotland plc; (x) JPMorgan Chase Bank, N.A.; (xi) J.P. Morgan Securities Inc. (f/k/a Bear Stearns & Co.); (xii) JP Morgan Securities LLC; (xiii) HSBC Bank USA, N.A.; (xiv) HSBC Finance Corporation; (xv) HSBC Securities (USA) Inc.

1. Schwab Money Market Fund

200. During the Relevant Period, Plaintiff Schwab Money Market Fund purchased an aggregate of $1.4 billion of floating-rate instruments—including bank notes and debt, financial institutions funding notes, mortgage discount notes, mortgage loans, and other mortgage-related instruments—that were affected by Defendants' suppression of LIBOR. Of those, Plaintiff purchased $327 million of instruments from Defendant JPMorgan Chase and purchased $779 million of instruments from dealer entities that were subsidiaries or other affiliates of

Defendants.

201. During the Relevant Period, Plaintiff Schwab Money Market Fund purchased an aggregate of $83.5 billion of fixed-rate instruments with a remaining maturity of between five and 365 days at the time of purchase—including bank and financial institutions funding notes and debt, mortgage discount notes, mortgage loans, and other mortgage-related instruments—that were affected by Defendants' suppression of LIBOR. Of those, Plaintiff purchased more than $20 billion of instruments from Defendants Citibank, Deutsche Bank, and JPMorgan Chase, collectively, and purchased more than $28 billion of instruments from dealer entities that were subsidiaries or other affiliates of Defendants.

2. <u>Schwab Value Advantage Money Fund</u>

202. During the Relevant Period, Plaintiff Schwab Value Advantage Money Fund purchased an aggregate of $4.56 billion of floating-rate instruments—including bank notes and debt, financial institutions funding notes, mortgage discount notes, mortgage loans, and other mortgage-related instruments—that were affected by Defendants' suppression of LIBOR. Of those, Plaintiff purchased $601 million of instruments from Defendant JPMorgan Chase and purchased more than $1.9 billion of instruments from dealer entities that were subsidiaries or other affiliates of Defendants.

203. During the Relevant Period, Plaintiff Schwab Value Advantage Money Fund purchased an aggregate of $288 billion of fixed-rate instruments with a remaining maturity of between five and 365 days at the time of purchase—including bank and financial institutions funding notes and debt, mortgage discount notes, mortgage loans, and other mortgage-related instruments—that were affected by Defendants' suppression of LIBOR. Of those, Plaintiff purchased more than $73 billion of instruments from Defendants Citibank, Deutsche Bank, and JPMorgan Chase, collectively, and purchased more than $91 billion of instruments from dealer

entities that were subsidiaries or other affiliates of Defendants.

3. **Schwab Retirement Advantage Money Fund**

204. During the Relevant Period, Plaintiff Schwab Retirement Advantage Money Fund purchased an aggregate of $55 million of floating-rate instruments—including bank notes and debt, corporate debt, financial institutions funding notes, mortgage discount notes, mortgage loans, and other mortgage-related instruments—that were affected by Defendants' suppression of LIBOR. Of those, Plaintiff purchased $19 million of instruments from Defendant JPMorgan Chase and purchased $34 million of instruments from dealer entities that were subsidiaries or other affiliates of Defendants.

205. During the Relevant Period, Plaintiff Schwab Retirement Advantage Money Fund purchased an aggregate of $4.7 billion of fixed-rate instruments with a remaining maturity of between five and 365 days at the time of purchase—including bank and financial institutions funding notes and debt, mortgage discount notes, mortgage loans, and other mortgage-related instruments—that were affected by Defendants' suppression of LIBOR. Of those, Plaintiff purchased more than $1 billion of instruments from Defendants Citibank, Deutsche Bank, and JPMorgan Chase, collectively, and more than $1.5 billion of instruments from dealer entities that were subsidiaries or other affiliates of Defendants.

4. **Schwab Investor Money Fund**

206. During the Relevant Period, Plaintiff Schwab Investor Money Fund purchased an aggregate of $195 million of floating-rate instruments—including bank notes and debt, corporate debt, financial institutions funding notes, mortgage discount notes, mortgage loans, and other mortgage-related instruments—that were affected by Defendants' suppression of LIBOR. Of those, Plaintiff purchased $42 million of instruments from Defendant JPMorgan Chase and purchased $94 million of instruments from dealer entities that were subsidiaries or

other affiliates of Defendants.

207. During the Relevant Period, Plaintiff Schwab Investor Money Fund purchased an aggregate of $12 billion of fixed-rate instruments with a remaining maturity of between five and 365 days at the time of purchase—including bank and financial institutions funding notes and debt, mortgage discount notes, mortgage loans, and other mortgage-related instruments—that were affected by Defendants' suppression of LIBOR. Of those, Plaintiff purchased more than $3 billion of instruments from Defendants Citibank, Deutsche Bank, and JPMorgan Chase, collectively, and purchased more than $4 billion of instruments from dealer entities that were subsidiaries or other affiliates of Defendants.

5. <u>Schwab Cash Reserves</u>

208. During the Relevant Period, Plaintiff Schwab Cash Reserves purchased an aggregate of $2.59 billion of floating-rate instruments—including bank notes and debt, financial institutions funding notes, mortgage discount notes, mortgage loans, and other mortgage-related instruments—that were affected by Defendants' suppression of LIBOR. Of those, Plaintiff purchased $580 million of instruments from Defendant JPMorgan Chase and purchased more than $1 billion of instruments from dealer entities that were subsidiaries or other affiliates of Defendants.

209. During the Relevant Period, Plaintiff Schwab Cash Reserves purchased an aggregate of $146.7 billion of fixed-rate instruments with a remaining maturity of between five and 365 days at the time of purchase—including bank and financial institutions funding notes and debt, mortgage discount notes, mortgage loans, and other mortgage-related instruments—that were affected by Defendants' suppression of LIBOR. Of those, Plaintiff purchased more than $38 billion of instruments from Defendants Citibank, Deutsche Bank, and JPMorgan Chase, collectively, and purchased more than $47 billion of instruments from dealer entities that were

subsidiaries or other affiliates of Defendants.

6. Schwab Advisor Cash Reserves

210. During the Relevant Period, Plaintiff Schwab Advisor Cash Reserves purchased an aggregate of $2.2 billion of floating-rate instruments—including bank notes and debt, financial institutions funding notes, mortgage discount notes, mortgage loans, and other mortgage-related instruments—that were affected by Defendants' suppression of LIBOR. Of those, Plaintiff purchased $106 million of instruments from Defendant JPMorgan Chase and purchased more than $1.4 billion of instruments from dealer entities that were subsidiaries or other affiliates of Defendants.

211. During the Relevant Period, Plaintiff Schwab Advisor Cash Reserves purchased an aggregate of $116.5 billion of fixed-rate instruments with a remaining maturity of between five and 365 days at the time of purchase—including bank notes and debt, mortgage discount notes, mortgage loans, and other mortgage-related instruments—that were affected by Defendants' suppression of LIBOR. Of those, Plaintiff purchased more than $29 billion of instruments from Defendants Citibank, Deutsche Bank, JPMorgan Chase, and UBS, collectively, and purchased more than $40 billion of instruments from dealer entities that were subsidiaries or other affiliates of Defendants.

7. Schwab YieldPlus Fund

212. As of July 1, 2007, Plaintiff Schwab YieldPlus Fund held an aggregate of $3.7 billion of floating-rate instruments—including corporate debt and bank and financial institutions funding notes—that were affected by Defendants' suppression of LIBOR during the Relevant Period.

213. During the Relevant Period, Plaintiff purchased an aggregate of $13.6 billion of fixed-rate instruments with a remaining maturity of between five and 365 days at the time of

purchase—including corporate debt, financial institutions funding debt, mortgage discount notes, mortgage loans, and other mortgage-related instruments—that were affected by Defendants' suppression of LIBOR. Of those, Plaintiff purchased more than $5 billion of instruments from Defendant JPMorgan Chase and purchased more than $5.2 billion of instruments from dealer entities that were subsidiaries or other affiliates of Defendants.

CLAIMS FOR RELIEF

(Against All Defendants)

FIRST CLAIM FOR RELIEF

Violation of Section 1 of the Sherman Act, 15 U.S.C. § 1

214. The Schwab Funds incorporate by reference and reallege the preceding allegations as though fully set forth herein.

215. Defendants entered into and engaged in a conspiracy in unreasonable restraint of trade in violation of Section 1 of the Sherman Act, 15 U.S.C. § 1.

216. During the Relevant Period, Defendants controlled what LIBOR rate would be reported and therefore controlled prices in the market for LIBOR-based financial instruments. Defendants competed in this market.

217. The conspiracy consisted of a continuing agreement, understanding or concerted action between and among Defendants and their co-conspirators in furtherance of which Defendants fixed, maintained or made artificial prices for LIBOR-based financial instruments. Defendants' conspiracy constitutes a *per se* violation of the federal antitrust laws and is, in any event, an unreasonable and unlawful restraint of trade.

218. Defendants' conspiracy, and the resulting impact on the market for LIBOR-based financial instruments, occurred in and affected interstate and international commerce.

219. As a proximate result of Defendants' unlawful conduct, the Schwab Funds have

suffered injury to their business or property.

220. The Schwab Funds are entitled to treble damages for the violations of the Sherman Act alleged herein.

SECOND CLAIM FOR RELIEF

Violation of the Racketeer Influenced and Corrupt Organizations Act (RICO), 18 U.S.C. §§ 1961 *et seq.*

221. The Schwab Funds incorporate by reference and reallege the preceding allegations as though fully set forth herein.

Defendants Engaged In Conduct Actionable Under RICO.

222. 18 U.S.C. § 1962(c) makes it illegal for "any person employed by or associated with any enterprise engaged in, or the activities of which affect, interstate or foreign commerce, to conduct or participate, directly or indirectly, in the conduct of such enterprise's affairs through a pattern of racketeering activity or collection of unlawful debt."

223. 18 U.S.C. § 1962(d), in turn, makes it "unlawful for any person to conspire to violate any of the provisions of subsection (a), (b), or (c) of this section."

224. Under 18 U.S.C. § 1961(1), and as applicable to Section 1962, "racketeering activity" means (among other things) acts indictable under certain sections of Title 18, including 18 U.S.C. § 1341 (relating to mail fraud), 18 U.S.C. § 1343 (relating to wire fraud), and 18 U.S.C. § 1344 (relating to financial institution fraud).

225. 18 U.S.C. § 1961(5) provides that, to constitute a "pattern of racketeering activity," conduct "requires at least two acts of racketeering activity, one of which occurred after the effective date of this chapter and the last of which occurred within ten years (excluding any period of imprisonment) after the commission of a prior act of racketeering activity."

226. 18 U.S.C. § 1961(3) defines "person" as "any individual or entity capable of

holding a legal or beneficial interest in property," and 18 U.S.C. § 1961(4) defines "enterprise" as "any individual, partnership, corporation, association, or other legal entity, and any union or group of individuals associated in fact although not a legal entity."

227. 18 U.S.C. § 1341, the mail fraud statute invoked by 18 U.S.C. § 1961(1) as a predicate act, makes it unlawful to have "devised or intend[ed] to devise any scheme or artifice to defraud, or for obtaining money or property by means of false or fraudulent pretenses, representations, or promises, or to sell, dispose of, loan, exchange, alter, give away, distribute, supply, or furnish or procure for unlawful use any counterfeit or spurious coin, obligation, security, or other article, or anything represented to be or intimated or held out to be such counterfeit or spurious article, for the purpose of executing such scheme or artifice or attempting so to do, places in any post office or authorized depository for mail matter, any matter or thing whatever to be sent or delivered by the Postal Service, or deposits or causes to be deposited any matter or thing whatever to be sent or delivered by any private or commercial interstate carrier, or takes or receives therefrom, any such matter or thing, or knowingly causes to be delivered by mail or such carrier according to the direction thereon, or at the place at which it is directed to be delivered by the person to whom it is addressed, any such matter or thing, shall be fined under this title or imprisoned not more than 20 years, or both. If the violation affects a financial institution, such person shall be fined not more than $1,000,000 or imprisoned not more than 30 years, or both."

228. 18 U.S.C. § 1343, the wire fraud statute invoked by 18 U.S.C. § 1961(1) as a predicate act, provides that "[w]hoever, having devised or intending to devise any scheme or artifice to defraud, or for obtaining money or property by means of false or fraudulent pretenses, representations, or promises, transmits or causes to be transmitted by means of wire, radio, or

television communication in interstate or foreign commerce, any writings, signs, signals, pictures, or sounds for the purpose of executing such scheme or artifice, shall be fined under this title or imprisoned not more than 20 years, or both."

229. 18 U.S.C. § 1344, the federal bank fraud statute invoked by 18 U.S.C. § 1961(1) as a predicate act, states:

> Whoever knowingly executes, or attempts to execute, a scheme or artifice –
>
> 1. to defraud a financial institution, or
>
> 2. to obtain any of the moneys, funds, credits, assets, securities, or other property owned by, or under the custody or control of, a financial institution, by means of false or fraudulent pretenses, representations, or promises shall be fined not more than $1,000,000 or imprisoned for not more than 30 years, or both.

230. At all relevant times, Defendants, including the employees who conducted Defendants' affairs through illegal acts (including by communicating false LIBOR quotes to the BBA or directing other employees to do so) were "person[s]" within the meaning of 18 U.S.C. § 1961(4), with a definable corporate structure and a hierarchy of corporate direction and control.

231. At all relevant times, the Schwab Funds were "person[s]" within the meaning of 18 U.S.C. § 1961(3).

Defendants Formed A RICO Enterprise.

232. Defendants' collective association, including through their participation together as members of the BBA's USD-LIBOR panel, constitutes the RICO enterprise in this case. Every member of the enterprise participated in the process of misrepresenting their costs of borrowing to the BBA. Using those false quotes to cause the BBA to set LIBOR artificially low, thereby allowing Defendants to increase their net interest revenues by making artificially low payments to investors such as the Schwab Funds, constitutes the common purpose of the

enterprise.

The Enterprise Has Perpetrated A Continuing Practice Of Racketeering.

233. For at least four years before this Complaint was filed, Defendants, in concert, made false statements to the BBA for the purpose and with the effect of manipulating LIBOR to be lower than it otherwise would have been. Defendants did so for the purpose and with the effect of decreasing their payments to investors such as the Schwab Funds and increasing their net interest revenues. Defendants earned hundreds of millions, if not billions, of dollars in wrongful profits as a result, which they shared with the employees who perpetrated the scheme. The conduct of every party involved in the scheme is hardly an isolated occurrence that resulted in one fraudulent charge.

234. In perpetrating the fraudulent scheme, each Defendant directly or indirectly through its corporate structure has designed and implemented a uniform scheme to manipulate LIBOR. Defendants' daily making and communicating of quotes to the BBA comprise one common, uniform nearly identical system of procedures used in virtually an identical way every day.

235. For at least the past four years, Defendants have knowingly, intentionally, or recklessly engaged in an ongoing pattern of racketeering under 18 U.S.C. § 1962(c) by committing the predicate acts of mail fraud within the meaning of 18 U.S.C. § 1341, wire fraud within the meaning of 18 U.S.C. § 1343, and bank fraud within the meaning of 18 U.S.C. § 1344(2), by knowingly and intentionally implementing the scheme to make false statements about their costs of borrowing, to manipulate LIBOR, which allowed Defendants to reap unlawful profits.

236. Defendants have committed the predicate act of mail fraud under 18 U.S.C. § 1341, thus triggering Section 1962(c) liability, by devising or intending to "devise a scheme or

artifice to defraud" purchasers and holders of LIBOR-based financial instruments, and "for the purpose of executing such scheme or artifice or attempting so to do," placed or knowingly caused to be placed in a post office or authorized depository for mail matter, documents or packages to be sent or delivered by the Postal Service or a private or commercial interstate carrier, or received from those entities such documents or packages, including: (i) documents offering for sale LIBOR-based financial instruments and (ii) correspondence regarding offerings of LIBOR-based financial instruments (the conduct described in this paragraph is referred to as the "Mail Fraud").

237. On information and belief, the Mail Fraud is the result of Defendants "having devised or intended to devise a scheme or artifice to defraud" holders of LIBOR-based financial instruments, for the purpose of obtaining money from those holders through "false or fraudulent pretenses, representations, or promises."

238. By devising the scheme or artifice to defraud consumers as described herein, and for obtaining money from holders of LIBOR-based financial instruments through "false or fraudulent pretenses, representations, or promises" about LIBOR-based financial instruments, Defendants transmitted or caused to be transmitted by means of "wire communication in interstate or foreign commerce, . . . writings, signs, signals, [and] pictures," "for the purpose of executing such scheme or artifice," including by: (i) transmitting documents offering LIBOR-based financial instruments for sale; (ii) transmitting phony statements about their costs of borrowing; (iii) transmitting e-mail communications relating to the process of determining, making, or transmitting phony statements about their borrowing costs; (iv) collecting funds from the Schwab Funds via electronic fund transfers or electronic communication with the Funds' bank or credit card institution; or (v) transmitting payments to the Funds.

239. In addition to that conduct, the Schwab Funds are informed and believe Defendants used the mails and wires in conjunction with reaching their agreement to make false statements about their costs of borrowing, to manipulate LIBOR.

240. The Schwab Funds do not base their RICO claims on any conduct that would have been actionable as fraud in the purchase or sale of securities.

The Racketeering Scheme Affected Interstate Commerce.

241. Through the racketeering scheme described above, Defendants used the enterprise to improperly increase their profits to the detriment of holders of LIBOR-based financial instruments, who resided in different states.

242. The Schwab Funds' allegations satisfy RICO's "interstate commerce" element because the racketeering claims alleged herein arise out of, and are based on, Defendants' use of the Internet or the mails across state lines as well as agreements between entities in different states to manipulate LIBOR. Using those interstate channels to coordinate the scheme and transmit fraudulent statements to the Schwab Funds across state lines satisfies RICO's requirement of an effect on interstate commerce.

Defendants Conspired To Violate RICO.

243. Apart from constructing and carrying out the racketeering scheme detailed above, Defendants conspired to violate RICO, constituting a separate violation of RICO under 18 U.S.C. § 1962(d).

244. The fraudulent scheme, as set forth above, alleges a violation of RICO in and of itself.

245. Defendants organized and implemented the scheme, and ensured it continued uninterrupted by concealing their manipulation of LIBOR from investors, including the Schwab Funds.

246. Defendants knew the scheme would defraud purchasers and holders of LIBOR-based financial instruments of millions of dollars of interest, yet each Defendant remained a participant despite the fraudulent nature of the enterprise. At any point while the scheme has been in place, any of the participants could have ended the scheme by abandoning the conspiracy and notifying the public and law enforcement authorities of its existence. Rather than stopping the scheme, however, the members of the enterprise deliberately chose to continue it, to the direct detriment of investors such as the Schwab Funds.

The Schwab Funds Suffered Injury Resulting From The Pattern of Racketeering Activity.

247. Because the Schwab Funds unknowingly paid money to Defendants for LIBOR-based financial instruments that paid interest at a manipulated rate, and in fact collected less interest than they would have absent the conspiracy, the Funds are direct victims of Defendants' wrongful and unlawful conduct. The Funds' injuries were direct, proximate, foreseeable, and natural consequences of Defendants' conspiracy; indeed, those effects were precisely why the scheme was concocted. In making payments to Defendants, the Funds gave money in the custody or control of financial institutions. There are no independent factors that account for the Funds' economic injuries, and the loss of money satisfies RICO's injury requirement.

248. The pattern of racketeering activity, as described in this Complaint, is continuous, ongoing and will continue unless Defendants are enjoined from continuing their racketeering practices. Defendants have consistently demonstrated their unwillingness to discontinue the illegal practices described herein, and they continue their pattern of racketeering as of the filing of this Complaint.

249. The Schwab Funds are entitled to recover treble damages for the injuries they have sustained, according to proof, as well as restitution and costs of suit and reasonable

attorneys' fees in accordance with 18 U.S.C. § 1964(c).

250. As a direct and proximate result of the subject racketeering activities, the Schwab Funds are entitled to an order, in accordance with 18 U.S.C. § 1964(a), enjoining and prohibiting Defendants from further engaging in their unlawful conduct.

THIRD CLAIM FOR RELIEF

Cartwright Act, Cal. Bus. & Prof. Code §§ 16720 *et seq.*

251. The Schwab Funds incorporate by reference and reallege the preceding allegations as though fully set forth herein.

252. Defendants entered into and engaged in an unlawful trust in restraint of the trade and commerce described above in violation of California Business and Professions Code section 16720.

253. During the Relevant Period, Defendants controlled what LIBOR rate would be reported and therefore controlled prices in the market for LIBOR-based financial instruments. Defendants competed in this market.

254. The conspiracy consisted of a continuing agreement, understanding or concerted action between and among Defendants and their co-conspirators in furtherance of which Defendants fixed, maintained, or made artificial prices for LIBOR-based financial instruments. Defendants' conspiracy constitutes a *per se* violation of the federal antitrust laws and is, in any event, an unreasonable and unlawful restraint of trade.

255. Defendants' conspiracy, and the resulting impact on the market for LIBOR-based financial instruments, occurred in and affected interstate and international commerce.

256. As a proximate result of Defendants' unlawful conduct, the Schwab Funds have suffered injury to their business or property.

257. Accordingly, the Schwab Funds seek three times their damages caused by

Defendants' violations of the Cartwright Act, the costs of bringing suit, reasonable attorneys' fees, and a permanent injunction enjoining Defendants' from ever again entering into similar agreements in violation of the Cartwright Act.

FOURTH CLAIM FOR RELIEF

Interference with Economic Advantage (under California Law)

258. The Schwab Funds incorporate by reference and reallege the preceding allegations as though fully set forth herein.

259. As set forth in this Complaint, Defendants manipulated LIBOR in violation of federal and state law.

260. An economic relationship existed between the Schwab Funds and issuers or sellers of LIBOR-based financial instruments, which obligated the issuers or sellers to make payments to the Funds at a rate dependent on LIBOR.

261. Defendants' unlawful manipulation of LIBOR interfered with and disrupted that relationship by defeating the parties' expectations that LIBOR would be set honestly and accurately and would provide a fair benchmark for those LIBOR-based financial instruments. As a result, the Schwab Funds received lower payments on those instruments than they otherwise would have, and overpaid for the instruments, and were damaged thereby.

262. Defendants acted with the knowledge that interference or disruption of the Schwab Funds' relationships with issuers or sellers of LIBOR-based financial instruments were certain or substantially certain to result from Defendants' unlawful manipulation of LIBOR.

FIFTH CLAIM FOR RELIEF

Breach of the Implied Covenant of Good Faith (under California Law)

263. The Schwab Funds incorporate by reference and reallege the preceding allegations as though fully set forth herein.

264. The Schwab Funds contracted to purchase LIBOR-based financial instruments from Defendants or dealer entities that were subsidiaries or other affiliates of Defendants.

265. The Funds performed all of their obligations under the applicable contracts.

266. All conditions required for Defendants' performance of those contracts were satisfied.

267. Defendants unfairly interfered with the Schwab Funds' right to receive the benefits of the subject contracts by secretly manipulating LIBOR to be lower than it otherwise would have been, as alleged in the foregoing paragraphs of this Complaint.

268. The Schwab Funds received less interest and lower returns on the LIBOR-based financial instruments than they would have absent Defendants' manipulation of LIBOR, and were therefore harmed.

SIXTH CLAIM FOR RELIEF

Unjust Enrichment (under California Law)

269. The Schwab Funds incorporate by reference and reallege the preceding allegations as though fully set forth herein.

270. By means of their unlawful conduct set forth in this Complaint—including misrepresenting their costs of borrowing to the BBA to manipulate LIBOR—Defendants knowingly acted in an unfair, unconscionable, and oppressive manner toward the Schwab Funds.

271. Through their unlawful conduct, Defendants knowingly received and retained wrongful benefits and funds from the Schwab Funds. Defendants thereby acted with conscious disregard for the Funds' rights.

272. As a result of their unlawful conduct, Defendants have realized substantial ill-gotten gains. Defendants have unlawfully manipulated LIBOR at the expense of, and to the detriment of, the Schwab Funds, and to Defendants' benefit and enrichment.

273. The Schwab Funds' detriment and Defendants' enrichment are traceable to, and resulted directly and proximately from, the conduct challenged in this Complaint.

274. Under the common law doctrine of unjust enrichment, it is inequitable to permit Defendants to retain the benefits they received, and are still receiving, without justification, from their manipulation of LIBOR in an unfair, unconscionable, and oppressive manner. Defendants' retention of such funds under circumstances making it inequitable to do so constitutes unjust enrichment.

275. The financial benefits Defendants derived rightfully belong to the Schwab Funds. The Court should compel Defendants to disgorge, in a common fund for the Funds' benefit, all unlawful or inequitable proceeds Defendants received. The Court should impose a constructive trust upon all unlawful or inequitable sums Defendants received that are traceable to the Funds.

276. The Schwab Funds have no adequate remedy at law.

PRAYER FOR RELIEF

WHEREFORE, the Schwab Funds pray for relief as follows:

(A) That the Court enter an order declaring that Defendants' actions as set forth in this Complaint, and in other respects, violate the law;

(B) That the Court enter judgment awarding the Schwab Funds damages against Defendants for all economic, monetary, actual, consequential, and compensatory damages the Funds suffered as a result of Defendants' conduct, or rescission, together with pre- and post-judgment interest at the maximum rate allowable by law;

(C) That the Court award the Schwab Funds exemplary or punitive damages against Defendants to the extent allowable by law;

(D) That the Court award the Schwab Funds damages against Defendants for Defendants' violation of the federal antitrust laws and RICO in an amount to be trebled in accordance with those laws;

(E) That the Court issue an injunction prohibiting Defendants from continuing the misconduct alleged in this Complaint, including their ongoing manipulation of LIBOR;

(F) That the Court order the disgorgement of the ill-gotten gains Defendants derived from their misconduct;

(G) That the Court award the Schwab Funds restitution of all amounts they paid to Defendants as consideration for notes and other financial instruments affected by Defendants' misconduct;

(H) That the Court award the Schwab Funds their costs of suit, including reasonable attorneys' fees and expenses; and

(I) That the Court award such other and further relief as the Court may deem just and proper.

DEMAND FOR JURY TRIAL

The Schwab Funds respectfully demand a trial by jury of all issues so triable.

Dated: April 30, 2012

LIEFF, CABRASER, HEIMANN & BERNSTEIN, LLP

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